PHILIPS DVD-703

MODEL

SERVICE MANUAL

DVD-Video Player **DVD SD3.x Monoboard**

AA 02.01

Service
Service
Service

Service Information

General

Introduction of SD3.x L7 & L8 mono board:

Changes from L4 to L7

- SDRAM footprint, at pos. 7404 and 7405, has been removed.
- Additional 2 resistors, at pos. 3424 and 3425, used for the 90ns ROM type.
- Relayout to improve EMC.

Changes from L7 to L8

- Removed mostly jumpers and relayout to improve EMC.

Since the change from L7 to L8 is minimal, only the L8 mono board schematic, layout, and parts list are published.
This service information will supplement the SD3.0 service manual (3122 785 11010) and service information (3122 785 40490).

Remarks

SD3.x L7 & L8 monoboard has been introduced as a running change during production for the following models:.

VFM2001

- EU models:
  - DVD612/0x2;DVD612S/002;DVD622/0x2;DVD712/0x1;DVD722/0x1;DVD752/0X1;DVD762/0x1;DVD870/0x1;DVD870P/0x1;DVD870L/0x1
- Non-EU models:
  - DVD703/032;DVD703/692;DVD703/752;DVD703/783;DVD712/171;DVD712/172;DVD870P/171

STEP2001

- EU models:
  - DVD952/0x1;DVDQ40/0x1;DVDQ50/0x1
- Non-EU models:
  - DVDQ50/171; DVDQ50/69x; DVDQ50/75x; DVDQ50/78x

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Spare Parts List

Mechanism

Various

0001	9305 023 61104	VAL6011/04

Mono PWB

Various

1100	2422 025 16543	CON BM H 4P M 2.00 PH SMD R
1104	2422 025 15963	CON BM H 24P F 0.50 FFC SMD R
1106	2422 025 16158	CON BM H 8P F 1.00 FFC 0.3 R
1205	2422 540 98428	RES CER SM 8M467 CSTCC8.46MHz R
1300	2422 540 98426	RES CER SM 6MHz CSTCC6.00MHz R
1301	4822 267 51454	CONN. 11P FEMALE
1501	2422 025 16702	CON BM H 5P M 2.00 PH SMD R
1506	4822 267 60409	CONN 22P FEMALE
1600	2422 025 16705	CON BM H 12P M 2.00 PH SMD R
1602	2422 025 16703	CON H 7P M 2.00 PH SMD R
1603	2422 025 16389	CON BM V 22P F 1.00 FFC 0.3 R
1604	2422 025 16388	CON BM V 16P F 1.00 FFC 0.3 R

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2100	4822 126 14305	100nF 10% 16V 0603
2101	4822 126 14305	100nF 10% 16V 0603
2103	4822 124 80151	47µF 16V
2104	4822 126 13193	4.7nF 10% 63V
2105	4822 122 33761	22pF 5% 50V
2107	4822 126 13956	68pF 5% 63V 0603
2108	4822 126 14315	390pF 5% 50V 0603
2109	2020 552 95697	
2110	2222 861 15222	63V 2N2 5%
2111	4822 126 14305	100nF 10% 16V 0603
2112	5322 126 11578	1nF 10% 50V 0603
2113	4822 126 14305	100nF 10% 16V 0603
2114	4822 122 31765	100pF 2% 63V 1206
2115	4822 126 14305	100nF 10% 16V 0603
2116	4822 126 14305	100nF 10% 16V 0603
2117	4822 126 14305	100nF 10% 16V 0603
2118	3198 017 42230	0603 50V 22nF COL
2119	3198 017 42230	0603 50V 22nF COL
2120	4822 126 14305	100nF 10% 16V 0603
2121	4822 126 13879	220nF 20% 16V
2122	3198 017 42230	0603 50V 22nF COL
2123	4822 126 14305	100nF 10% 16V 0603
2124	4822 126 14305	100nF 10% 16V 0603
2125	4822 126 14305	100nF 10% 16V 0603
2126	4822 126 14305	100nF 10% 16V 0603
2127	4822 126 14305	100nF 10% 16V 0603
2128	4822 126 14508	180pF 5% 50V 0603
2129	4822 126 14508	180pF 5% 50V 0603
2130	4822 122 33761	22pF 5% 50V
2131	4822 126 14494	22nF 10% 25V 0603
2136	4822 126 14305	100nF 10% 16V 0603
2137	4822 126 14305	100nF 10% 16V 0603
2138	4822 126 14305	100nF 10% 16V 0603
2139	4822 126 14305	100nF 10% 16V 0603
2140	4822 126 14241	0603 50V 330P COL R
2141	4822 122 33761	22pF 5% 50V
2142	5322 126 11583	10nF 10% 50V 0603
2143	4822 126 13883	220pF 5% 50V
2144	4822 126 13883	220pF 5% 50V
2145	4822 126 13883	220pF 5% 50V
2203	4822 126 14305	100nF 10% 16V 0603
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 126 14305	100nF 10% 16V 0603
2206	4822 126 14549	33nF 16V O6O3
2207	5322 126 11578	1nF 10% 50V 0603
2208	4822 126 14305	100nF 10% 16V 0603
2209	4822 126 14305	100nF 10% 16V 0603
2210	5322 126 11578	1nF 10% 50V 0603
2212	4822 126 14305	100nF 10% 16V 0603
2213	4822 126 14305	100nF 10% 16V 0603
2214	3198 017 42230	0603 50V 22nF COL
2215	4822 124 23237	22µF 6.3V
2216	5322 126 11578	1nF 10% 50V 0603
2226	4822 126 14305	100nF 10% 16V 0603
2227	4822 126 14305	100nF 10% 16V 0603
2228	4822 126 14305	100nF 10% 16V 0603
2229	4822 126 14305	100nF 10% 16V 0603
2300	4822 126 14305	100nF 10% 16V 0603
2301	4822 126 14305	100nF 10% 16V 0603
2302	4822 126 14305	100nF 10% 16V 0603
2303	4822 124 80349	47µF 20% 6.3V
2304	3198 017 42230	0603 50V 22nF COL
2305	3198 017 42230	0603 50V 22nF COL
2306	4822 124 23002	10µF 16V
2307	3198 017 42230	0603 50V 22nF COL
2309	4822 126 14305	100nF 10% 16V 0603
2310	4822 126 14305	100nF 10% 16V 0603
2314	4822 126 14305	100nF 10% 16V 0603
2315	4822 126 14305	100nF 10% 16V 0603
2318	5322 122 33861	120pF 10% 50V
2319	4822 126 11669	27pF
2320	4822 126 14305	100nF 10% 16V 0603
2321	4822 126 14305	100nF 10% 16V 0603
2401	4822 126 14305	100nF 10% 16V 0603
2402	4822 126 14305	100nF 10% 16V 0603
2403	4822 126 14305	100nF 10% 16V 0603
2404	4822 126 14305	100nF 10% 16V 0603
2405	4822 126 14305	100nF 10% 16V 0603
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603
2409	4822 126 14305	100nF 10% 16V 0603
2410	4822 126 14305	100nF 10% 16V 0603
2411	4822 126 14305	100nF 10% 16V 0603
2412	4822 126 14305	100nF 10% 16V 0603
2413	4822 126 14305	100nF 10% 16V 0603
2418	4822 124 12095	100µF 20% 16V
2419	4822 124 80349	47µF 20% 6.3V
2420	4822 124 80349	47µF 20% 6.3V
2421	2238 586 59812	0603 50V 100NP80M
2422	2238 586 59812	0603 50V 100NP80M
2423	4822 126 14305	100nF 10% 16V 0603
2424	2238 586 59812	0603 50V 100NP80M
2425	2238 586 59812	0603 50V 100NP80M
2426	4822 126 14305	100nF 10% 16V 0603
2427	4822 126 14305	100nF 10% 16V 0603
2500	4822 126 14305	100nF 10% 16V 0603
2503	4822 126 14305	100nF 10% 16V 0603
2504	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2507	4822 126 14494	22nF 10% 25V 0603
2509	4822 124 23002	10µF 16V
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 124 23002	10µF 16V
2512	4822 126 14305	100nF 10% 16V 0603
2513	4822 122 33761	22pF 5% 50V
2514	4822 122 33761	22pF 5% 50V
2515	4822 122 33761	22pF 5% 50V
2516	4822 122 33761	22pF 5% 50V
2517	4822 126 14305	100nF 10% 16V 0603
2518	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2519	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	4822 126 14305	100nF 10% 16V 0603
2523	4822 126 14305	100nF 10% 16V 0603
2524	4822 126 14305	100nF 10% 16V 0603
2525	4822 126 14305	100nF 10% 16V 0603
2526	4822 126 14305	100nF 10% 16V 0603
2527	4822 126 14305	100nF 10% 16V 0603
2528	4822 126 14305	100nF 10% 16V 0603
2529	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2530	4822 126 14305	100nF 10% 16V 0603
2531	4822 126 14305	100nF 10% 16V 0603
2532	4822 122 33777	47pF 5% 63V
2533	4822 122 33777	47pF 5% 63V
2534	5322 126 11578	1nF 10% 50V 0603
2535	5322 126 11578	1nF 10% 50V 0603
2536	4822 126 14305	100nF 10% 16V 0603
2537	4822 126 14305	100nF 10% 16V 0603
2538	4822 126 14305	100nF 10% 16V 0603
2539	4822 126 14305	100nF 10% 16V 0603
2540	4822 126 14305	100nF 10% 16V 0603
2600	4822 126 14494	22nF 10% 25V 0603
2601	4822 126 14247	0603 50V 1N5 COL R
2602	4822 126 14247	0603 50V 1N5 COL R
2603	4822 126 14305	100nF 10% 16V 0603
2604	4822 124 12095	100µF 20% 16V
2605	4822 126 14494	22nF 10% 25V 0603
2606	4822 124 12095	100µF 20% 16V
2607	4822 124 12095	100µF 20% 16V
2608	4822 124 23002	10µF 16V
2609	4822 124 80151	47µF 16V
2610	4822 126 14305	100nF 10% 16V 0603
2611	4822 124 12095	100µF 20% 16V
2612	4822 126 14305	100nF 10% 16V 0603
2613	4822 126 14305	100nF 10% 16V 0603
2614	4822 122 33777	47pF 5% 6.3V
2615	4822 122 33777	47pF 5% 63V
2616	4822 122 33777	47pF 5% 63V
2617	4822 122 33777	47pF 5% 63V
2619	4822 126 14305	100nF 10% 16V 0603
2620	4822 122 33777	47pF 5% 63V
2621	4822 122 33777	47pF 5% 63V
2622	4822 122 33777	47pF 5% 63V
2623	4822 122 33777	47pF 5% 63V
2624	4822 122 33777	47pF 5% 63V
2625	4822 122 33777	47pF 5% 63V
2626	4822 122 33777	47pF 5% 63V
2627	4822 122 33777	47pF 5% 63V
2632	4822 124 12095	100µF 20% 16V
2633	4822 124 12095	100µF 20% 16V
2634	4822 126 14305	100nF 10% 16V 0603
2635	4822 126 14305	100nF 10% 16V 0603
2636	4822 126 14305	100nF 10% 16V 0603
2637	4822 126 14305	100nF 10% 16V 0603
2638	4822 126 14305	100nF 10% 16V 0603
2639	4822 126 14305	100nF 10% 16V 0603
2641	4822 122 33761	22pF 5% 50V
2642	4822 122 33761	22pF 5% 50V
2647	4822 124 23002	10µF 16V
2648	4822 126 14305	100nF 10% 16V 0603

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3100	4822 117 11152	4Ω7 5%
3102	5322 117 13034	1k5 1% 0.063W 0603 RC22H
3103	5322 117 13034	1k5 1% 0.063W 0603 RC22H
3104	5322 117 13062	390Ω 1% 0.063W 0603 RC22H
3105	4822 051 30103	10k 5% 0.062W
3106	4822 051 30479	47Ω 5% 0.062W
3107	4822 051 20228	2Ω2 5% 0.1W
3108	4822 051 20228	2Ω2 5% 0.1W
3110	4822 051 30479	47Ω 5% 0.062W
3111	5322 117 13058	150Ω 1% 0.063W 0603 RC22H
3112	5322 117 13021	47Ω 1% 0.063W 0603 RC22H
3114	4822 051 20228	2Ω2 5% 0.1W
3115	4822 051 20228	2Ω2 5% 0.1W
3116	5322 117 13042	3k9 1% 0.063W 0603 RC22H
3117	4822 051 30181	180Ω 5% 0.062W
3118	4822 051 30681	680Ω 5% 0.062W
3119	5322 117 13062	390Ω 1% 0.063W 0603 RC22H
3120	4822 051 30102	1k 5% 0.062W
3121	4822 051 30273	27k 5% 0.062W
3122	4822 051 30471	470Ω 5% 0.062W
3123	4822 051 30103	10k 5% 0.062W
3124	4822 051 30471	470Ω 5% 0.062W
3125	4822 051 30103	10k 5% 0.062W
3126	4822 051 30103	10k 5% 0.062W
3127	4822 051 30223	22k 5% 0.062W
3128	2322 704 69109	
3129	4822 051 30392	3k9 5% 0.063W 0603
3130	4822 051 20228	2Ω2 5% 0.1W
3131	4822 051 20228	2Ω2 5% 0.1W
3132	4822 051 20228	2Ω2 5% 0.1W
3133	4822 051 20228	2Ω2 5% 0.1W
3134	5322 117 13047	330Ω 1% 0.063W 0603 RC22H
3135	4822 117 13613	2Ω2 5% 0603
3137	4822 117 13613	2Ω2 5% 0603
3138	5322 117 13053	6k8 1% 0.063W 0603 RC22H
3139	4822 117 12917	1Ω 5% 0.062W CASE0603
3140	4822 051 30479	47Ω 5% 0.062W
3141	4822 117 11152	4Ω7 5%
3142	5322 117 13028	12k 1% 0.063W 0603 RC22H
3143	5322 117 13043	220Ω 1% 0.063W 0603 RC22H
3144	2322 704 69109	
3146	4822 051 30103	10k 5% 0.062W
3147	4822 051 30103	10k 5% 0.062W
3148	5322 117 13022	22k 1% 0.063W 0603 RC22H
3153	4822 117 12139	22Ω 5% 0.062W
3155	4822 051 30103	10k 5% 0.062W
3157	4822 051 30103	10k 5% 0.062W

3158	5322 117 13017	100Ω 1% 0.063W 0603 RC22H
3160	4822 051 30101	100Ω 5% 0.062W
3161	4822 117 13613	2Ω2 5% 0603
3162	4822 051 30101	100Ω 5% 0.062W
3163	4822 051 30273	27k 5% 0.062W
3164	4822 117 13613	2Ω2 5% 0603
3165	5322 117 13063	120Ω 1% 0.063W 0603 RC22H
3166	4822 051 30393	39k 5% 0.062W
3167	4822 051 30101	100Ω 5% 0.062W
3168	5322 117 13047	330Ω 1% 0.063W 0603 RC22H
3169	4822 051 30101	100Ω 5% 0.062W
3170	4822 051 30101	100Ω 5% 0.062W
3171	4822 051 30101	100Ω 5% 0.062W
3172	4822 117 13632	100k 1% 0603 0.62W
3173	4822 117 13632	100k 1% 0603 0.62W
3174	4822 117 11152	4Ω7 5%
3175	4822 117 13613	2Ω2 5% 0603
3176	4822 051 30153	15k 5% 0.062W
3178	4822 117 11151	1Ω 5%
3179	4822 051 30221	220Ω 5% 0.062W
3180	4822 117 13632	100k 1% 0603 0.62W
3181	4822 051 30561	560Ω 5% 0.062W
3182	5322 117 13018	1k0 1% 0.063W 0603 RC22H
3183	5322 117 13017	100Ω 1% 0.063W 0603 RC22H
3184	2322 704 61204	
3185	4822 117 11151	1Ω 5%
3187	4822 051 30273	27k 5% 0.062W
3189	4822 051 30008	0Ω jumper
3190	4822 051 30008	0Ω jumper
3191	4822 051 30008	0Ω jumper
3192	4822 051 30008	0Ω jumper
3193	4822 051 30008	0Ω jumper
3194	4822 051 30008	0Ω jumper
3195	4822 051 30008	0Ω jumper
3197	4822 051 30008	0Ω jumper
3198	5322 117 13049	470Ω 1% 0.063W 0603 RC22H
3199	5322 117 13042	3k9 1% 0.063W 0603 RC22H
3200	4822 051 30103	10k 5% 0.062W
3201	4822 117 11151	1Ω 5%
3202	4822 117 11151	1Ω 5%
3203	4822 051 30105	1M 5% 0.062W
3204	4822 051 30331	330Ω 5% 0.062W
3205	4822 051 30103	10k 5% 0.062W
3206	4822 051 30103	10k 5% 0.062W
3208	4822 051 30272	2k7 5% 0.062W
3209	4822 051 30472	4k7 5% 0.062W
3210	4822 051 30392	3k9 5% 0.063W 0603
3211	4822 051 30472	4k7 5% 0.062W
3212	4822 117 11152	4Ω7 5%
3213	4822 117 11152	4Ω7 5%
3214	4822 051 30392	3k9 5% 0.063W 0603
3215	4822 051 30103	10k 5% 0.062W
3219	4822 051 30103	10k 5% 0.062W
3220	4822 051 30103	10k 5% 0.062W
3221	4822 051 30103	10k 5% 0.062W
3224	4822 051 30151	150Ω 5% 0.062W
3225	2322 704 62004	
3226	4822 051 30103	10k 5% 0.062W
3227	4822 051 30472	4k7 5% 0.062W
3229	4822 051 30123	12k 5% 0.062W
3230	4822 051 30103	10k 5% 0.062W
3231	4822 051 30103	10k 5% 0.062W
3232	4822 117 13613	2Ω2 5% 0603
3234	4822 117 12902	8k2 1% 0.063W 0603
3235	4822 117 13632	100k 1% 0603 0.62W
3236	4822 051 30472	4k7 5% 0.062W
3237	4822 051 30103	10k 5% 0.062W
3238	4822 051 30103	10k 5% 0.062W
3239	4822 051 30008	0Ω jumper
3240	4822 051 30103	10k 5% 0.062W
3242	4822 051 30008	0Ω jumper
3243	4822 051 30008	0Ω jumper
3246	4822 051 30008	0Ω jumper
3247	4822 051 30008	0Ω jumper
3249	4822 051 30008	0Ω jumper
3250	4822 051 30008	0Ω jumper
3251	4822 051 30008	0Ω jumper
3252	4822 051 30008	0Ω jumper
3253	4822 051 30008	0Ω jumper
3254	4822 051 30008	0Ω jumper
3255	4822 051 30008	0Ω jumper
3256	4822 051 30008	0Ω jumper
3257	4822 051 30008	0Ω jumper
3258	4822 051 30008	0Ω jumper
3259	4822 117 11151	1Ω 5%
3260	4822 117 11151	1Ω 5%
3261	4822 051 30102	1k 5% 0.062W
3262	4822 051 30008	0Ω jumper
3263	4822 051 30008	0Ω jumper

3265	4822 051 30472	4k7 5% 0.062W
3266	4822 117 13632	100k 1% 0603 0.62W
3300	4822 117 11152	4Ω7 5%
3301	4822 051 30105	1M 5% 0.062W
3302	4822 051 30221	220Ω 5% 0.062W
3304	4822 051 30272	2k7 5% 0.062W
3305	4822 051 30272	2k7 5% 0.062W
3309	4822 051 30103	10k 5% 0.062W
3310	4822 051 30223	22k 5% 0.062W
3311	4822 051 30223	22k 5% 0.062W
3312	4822 051 30472	4k7 5% 0.062W
3313	4822 051 30472	4k7 5% 0.062W
3316	4822 051 20108	1Ω 5% 0.1W
3317	4822 051 20108	1Ω 5% 0.1W
3318	4822 051 30472	4k7 5% 0.062W
3319	4822 051 30479	47Ω 5% 0.062W
3320	4822 051 30472	4k7 5% 0.062W
3321	4822 051 30682	6k8 5% 0.062W
3322	5322 117 13026	4k7 1% 0.063W 0603 RC22H
3323	5322 117 13026	4k7 1% 0.063W 0603 RC22H
3324	4822 117 13632	100k 1% 0603 0.62W
3325	4822 051 30682	6k8 5% 0.062W
3326	4822 051 30479	47Ω 5% 0.062W
3327	4822 051 30682	6k8 5% 0.062W
3328	4822 051 30223	22k 5% 0.062W
3329	4822 051 30223	22k 5% 0.062W
3330	4822 051 30223	22k 5% 0.062W
3331	4822 051 30332	3k3 5% 0.062W
3332	4822 051 30332	3k3 5% 0.062W
3333	4822 051 30101	100Ω 5% 0.062W
3334	4822 051 30101	100Ω 5% 0.062W
3335	4822 051 30101	100Ω 5% 0.062W
3336	4822 051 30101	100Ω 5% 0.062W
3337	4822 051 30101	100Ω 5% 0.062W
3338	4822 051 30101	100Ω 5% 0.062W
3339	4822 051 30008	0Ω jumper
3340	4822 051 30008	0Ω jumper
3347	4822 117 11152	4Ω7 5%
3348	4822 117 11152	4Ω7 5%
3403	4822 051 30103	10k 5% 0.062W
3404	4822 051 30103	10k 5% 0.062W
3405	4822 051 30103	10k 5% 0.062W
3412	4822 051 30008	0Ω jumper
3414	4822 051 30008	0Ω jumper
3416	4822 051 30008	0Ω jumper
3419	4822 051 30103	10k 5% 0.062W
3424	4822 051 30008	0Ω jumper
3500	4822 051 30332	3k3 5% 0.062W
3501	4822 051 30332	3k3 5% 0.062W
3502	4822 051 30223	22k 5% 0.062W
3505	4822 051 30103	10k 5% 0.062W
3506	4822 051 30472	4k7 5% 0.062W
3508	4822 051 30332	3k3 5% 0.062W
3509	4822 051 30103	10k 5% 0.062W
3512	4822 051 30103	10k 5% 0.062W
3513	4822 051 30103	10k 5% 0.062W
3514	4822 051 30103	10k 5% 0.062W
3515	4822 051 30103	10k 5% 0.062W
3517	4822 051 30332	3k3 5% 0.062W
3518	4822 051 30332	3k3 5% 0.062W
3519	4822 051 30103	10k 5% 0.062W
3520	4822 051 30332	3k3 5% 0.062W
3521	4822 117 13613	2Ω2 5% 0603
3522	4822 117 13613	2Ω2 5% 0603
3523	4822 051 30101	100Ω 5% 0.062W
3524	4822 051 30101	100Ω 5% 0.062W
3525	4822 051 30101	100Ω 5% 0.062W
3530	2322 704 61303	RST SM 0603 RC22H 13k PM1 R
3531	2322 704 61303	RST SM 0603 RC22H 13k PM1 R
3532	4822 051 30101	100Ω 5% 0.062W
3533	5322 117 13042	3k9 1% 0.063W 0603 RC22H
3534	5322 117 13042	3k9 1% 0.063W 0603 RC22H
3537	4822 051 30103	10k 5% 0.062W
3571	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3572	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3580	4822 117 13573	NETW 4 X 47Ω 5% MNR14
3581	4822 117 13573	NETW 4 X 47Ω 5% MNR14
3583	4822 051 30008	0Ω jumper
3588	4822 051 30332	3k3 5% 0.062W
3589	4822 051 30332	3k3 5% 0.062W
3590	4822 051 30681	680Ω 5% 0.062W
3591	4822 051 30152	1k5 5% 0.062W
3592	4822 051 30101	100Ω 5% 0.062W
3594	4822 051 30101	100Ω 5% 0.062W
3605	4822 051 30008	0Ω jumper
3606	4822 117 12925	47k 1% 0.063W 0603
3607	4822 117 13632	100k 1% 0603 0.62W
3608	4822 117 13632	100k 1% 0603 0.62W
3609	4822 117 13632	100k 1% 0603 0.62W
3610	4822 051 30103	10k 5% 0.062W

3611	4822 051 30103	10k 5% 0.062W
3612	4822 051 30103	10k 5% 0.062W
3613	4822 051 30103	10k 5% 0.062W
3614	4822 051 30103	10k 5% 0.062W
3615	4822 051 30103	10k 5% 0.062W
3616	4822 051 30472	4k7 5% 0.062W
3617	4822 051 30472	4k7 5% 0.062W
3618	4822 051 30223	22k 5% 0.062W
3619	4822 051 30223	22k 5% 0.062W
3620	4822 051 30101	100Ω 5% 0.062W
3621	4822 051 30101	100Ω 5% 0.062W
3622	4822 051 30101	100Ω 5% 0.062W
3623	4822 051 30101	100Ω 5% 0.062W
3624	4822 051 30101	100Ω 5% 0.062W
3625	4822 051 30101	100Ω 5% 0.062W
3626	4822 051 30102	1k 5% 0.062W
3627	4822 051 30471	470Ω 5% 0.062W
3628	4822 051 30471	470Ω 5% 0.062W
3629	4822 051 30472	4k7 5% 0.062W
3630	4822 051 30221	220Ω 5% 0.062W
3631	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3632	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3633	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3635	4822 051 30682	6k8 5% 0.062W
3636	4822 051 30682	6k8 5% 0.062W
3637	4822 051 30332	3k3 5% 0.062W
3642	4822 051 30103	10k 5% 0.062W
3647	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3648	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3651	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3654	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3655	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3656	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3657	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3658	4822 051 30102	1k 5% 0.062W
3659	4822 051 30102	1k 5% 0.062W
3660	4822 051 30102	1k 5% 0.062W
3661	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3662	4822 051 30102	1k 5% 0.062W
3663	4822 051 30102	1k 5% 0.062W
3664	5322 117 13059	560Ω 1% 0.063W 0603 RC22H
3665	4822 117 12139	22Ω 5% 0.062W
3667	4822 157 11499	BLM11P600SPT
3672	4822 051 30479	47Ω 5% 0.062W
3677	4822 051 30008	0Ω jumper
3678	4822 051 30008	0Ω jumper
3679	4822 051 30008	0Ω jumper
3681	4822 051 30008	0Ω jumper
3683	4822 051 30008	0Ω jumper
3685	4822 051 30008	0Ω jumper
3686	4822 051 30223	22k 5% 0.062W
3687	4822 051 30223	22k 5% 0.062W
3688	4822 051 30472	4k7 5% 0.062W
3689	4822 051 30223	22k 5% 0.062W
3692	4822 051 30331	330Ω 5% 0.062W
3693	4822 051 30331	330Ω 5% 0.062W
3694	4822 051 30681	680Ω 5% 0.062W
3695	4822 051 30681	680Ω 5% 0.062W
3705	4822 051 30103	10k 5% 0.062W
3706	4822 051 30103	10k 5% 0.062W
3707	4822 051 30472	4k7 5% 0.062W
3708	4822 051 30008	0Ω jumper

5200	4822 157 11717	BLM31P500SPT
5300	4822 157 11717	BLM31P500SPT
5301	4822 157 11717	BLM31P500SPT
5402	4822 157 11499	BLM11P600SPT
5403	4822 157 11499	BLM11P600SPT
5501	4822 157 70299	2.2µH (NL322522T-2R2J)
5502	4822 157 70299	2.2µH (NL322522T-2R2J)
5503	4822 157 71206	BLM21A601SPT
5504	4822 157 71206	BLM21A601SPT
5600	4822 157 71206	BLM21A601SPT
5601	4822 157 11499	BLM11P600SPT
5602	4822 157 70651	12µH (NL322522T-120J)
5603	4822 157 71206	BLM21A601SPT
5604	4822 157 70651	12µH (NL322522T-120J)
5605	4822 157 70651	12µH (NL322522T-120J)
5606	4822 157 70651	12µH (NL322522T-120J)

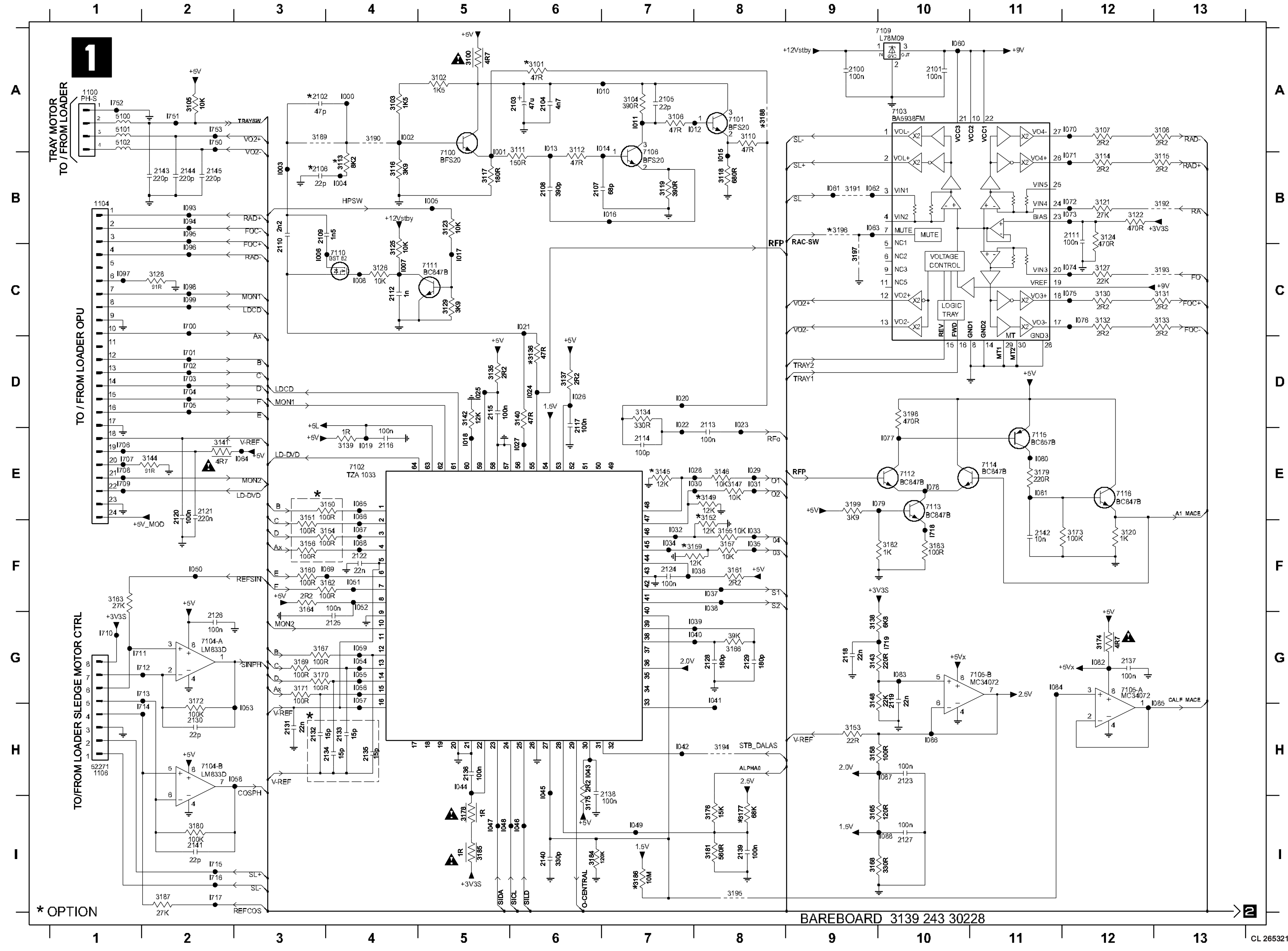
5607	4822 157 70651	12µH (NL322522T-120J)
5608	4822 157 70651	12µH (NL322522T-120J)
5609	4822 157 11717	BLM31P500SPT
5610	4822 157 11717	BLM31P500SPT
5611	4822 157 11717	BLM31P500SPT
5613	4822 157 11717	BLM31P500SPT
5614	4822 157 11717	BLM31P500SPT

6200	4822 130 11397	BAS316
6301	9322 128 69685	S1D
6302	9322 128 69685	S1D
6303	9322 128 69685	S1D
6600	9322 154 46685	DIO REC SM RB501V-40 (RHM0) R

7100	5322 130 42718	BFS20
7101	5322 130 42718	BFS20
7102	9352 637 37518	TZA1033HL
7103	4822 209 17229	BA5938FM
7104	4822 209 30095	LM833D
7105	4822 209 32073	MC34072D
7106	5322 130 42718	BFS20
7109	4822 209 15083	AN78M09
7109	9322 136 29668	L78M09CDT
7110	5322 130 60803	BST72A
7111	4822 130 60511	BC847B
7112	4822 130 60511	BC847B
7113	4822 130 60511	BC847B
7114	4822 130 60511	BC847B
7115	4822 130 60373	BC856B
7116	4822 130 60511	BC847B
7201	9351 869 80118	74HCT573DB
7202	3104 123 85860	AM29F002T/5.1.14
7203	4822 130 60373	BC856B
7207	4822 209 17231	SAA7399HL
7208	9322 139 67685	IC SM MC33464N-45A (MOTA) R
7208	9322 163 27685	IC SM NCP301LSN45 (ONSE) R
7209	4822 209 90927	L78L05ACD
7210	5322 130 60845	BC807-25
7211	4822 130 42804	BC817-25
7304	4822 209 16877	BA6856FP
7304	9322 139 85668	BA6665FM
7310	4822 209 15899	CY7C199-15C
7311	9352 622 13557	SAA7335HL
7312	4822 130 60373	BC856B
7315	4822 130 60511	BC847B
7316	9352 500 20118	IC SM 74LVC08AD (PHSE) R
7317	9352 500 20118	IC SM 74LVC08AD (PHSE) R
7407	9322 166 67668	IC SM MT48LC4M16A2TG-7E(MRN0)R
7501	4822 130 60511	BC847B
7503	9322 167 96671	IC SM STI5508AVB (ST00) Y
7503	9322 169 81671	STI5508EVB
7504	2722 171 08709	OSC XTL SM 27MHZ 120P FXO-31 R
7505	9322 156 81668	M24C32-WMN6TNKSA
7506	5322 130 63289	BSN20
7507	5322 130 63289	BSN20
7600	5322 209 71568	PC74HCT14T
7601	9322 142 88668	IC SM LF25CDT (ST00) R
7602	9322 142 88668	IC SM LF25CDT (ST00) R
7604	4822 130 60511	BC847B
7605	4822 209 17398	LD1117DT33
7607	4822 130 60511	BC847B
7608	4822 130 60373	BC856B
7609	4822 130 60373	BC856B
7610	4822 130 60511	BC847B
7611	9352 456 80115	74HCT1G125GW
7612	4822 130 60511	BC847B
7613	4822 130 60511	BC847B
7614	4822 130 60511	BC847B
7615	4822 130 60511	BC847B
7617	4822 130 60511	BC847B
7618	4822 130 60511	BC847B
7620	4822 130 60373	BC856B
7621	4822 130 42804	BC817-25
7631	4822 130 60511	BC847B
7632	4822 130 60511	BC847B

Electrical Diagrams and Print-Layouts

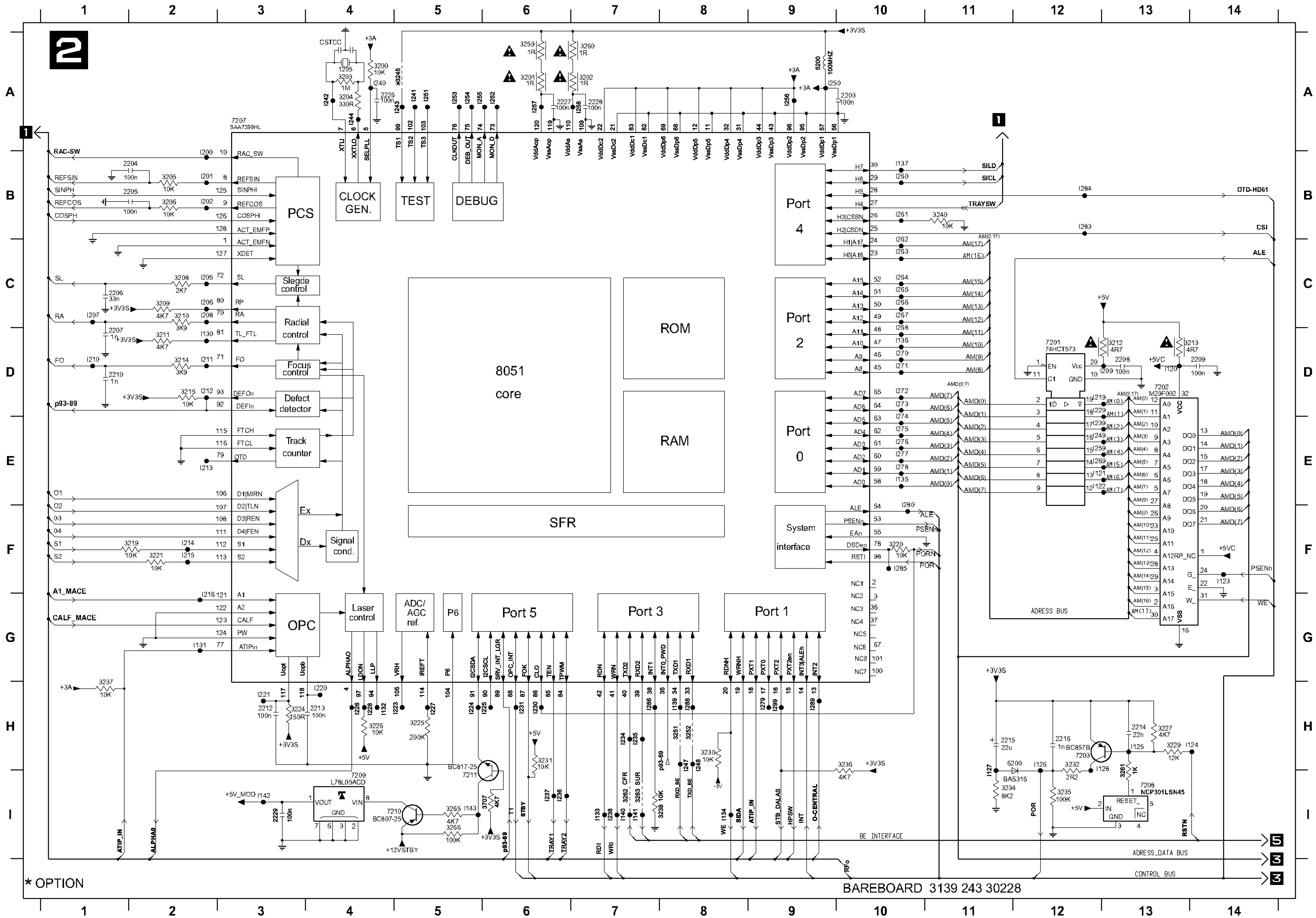
Monoboard


1
TRAY MOTOR TO / FROM LOADER
TO / FROM LOADER OPU
TO/FROM LOADER SLEDGE MOTOR CTRL
1100 PH-S
1104
1106 52271
7100 BFS20
7101 BFS20
7106 BFS20
7110 BST82
7111 BC847B
7102 TZA 1033
7103 BA5938FM
7109 L78M09
7104-A LM833D
7104-B LM833D
7105-A MC34072
7105-B MC34072
7112 BC847B
7113 BC847B
7114 BC847B
7115 BC857B
7116 BC847B
VOL- VOL+ VIN1 VIN2 MUTE NC1 NC2 NC3 NC5 VO2+ VO2- VCC3 VCC2 VCC1 VO4- VO4+ VIN5 VIN4 BIAS VIN3 VREF VO3+ VO3- GND3 GND1 GND2 MT MT1 MT2 REV FWD
MUTE
VOLTAGE CONTROL
LOGIC TRAY
TRAYSW VO2+ VO2- RAD+ FOC- FOC+ RAD- MON1 LDCD Ax B C D F E V-REF MON2 LD-DVD
HPSW RFP RAC-SW RFo A1 MACE CALF MACE STB_DALAS ALPHA0 SINPH COSPH REFSIN REFCOS SL+ SL- SIDA SICL SILD O-CENTRAL
+12Vstby +9V +5V +3V3S +5Vx 2.5V 2.0V 1.5V +5V_MOD
BAREBOARD 3139 243 30228
* OPTION
2
A B C D E F G H I
1 2 3 4 5 6 7 8 9 10 11 12 13

CL 26532123_008.eps
031202

1100	A1
1104	B1
1106	H1
2100	A9
2101	A10
2102	A3
2103	A6
2104	A6
2105	A7
2106	B3
2107	B6
2108	B6
2109	B3
2110	C3
2111	B12
2112	C4
2113	D8
2114	E7
2115	D5
2116	E4
2117	D6
2118	G9
2119	G10
2120	E2
2121	E2
2122	F4
2123	H10
2124	F7
2125	G4
2126	G2
2127	I10
2128	G8
2129	G8
2130	H2
2131	H3
2132	H3
2133	H4
2134	H4
2135	H4
2136	H5
2137	G12
2138	H7
2139	I8
2140	I6
2141	I2
2142	F11
2143	B2
2144	B2
2145	B2
3100	A5
3101	A6
3102	A5
3103	A4
3104	A7
3105	A2
3106	A7
3107	A12
3108	A13
3110	A8
3111	A6
3112	A6
3113	B4
3114	B12
3115	B13
3116	B4
3117	B5
3118	B8
3119	B7
3120	F12
3121	B12
3122	B12
3123	B5
3124	B12
3125	C4
3126	C4
3127	C12
3128	C2
3129	C5
3130	C12
3131	C13
3132	C12
3133	C13
3134	D7
3135	D5
3136	D6
3137	D6
3138	G9
3139	E4
3140	D6
3141	E2
3142	D5
3143	G9
3144	E2
3145	E7
3146	E8
3147	E8
3148	G9
3149	E8
3150	E4
3151	E3
3152	E8
3153	H9
3154	F4
3155	F8
3156	F3
3157	F8
3158	H9
3159	F8
3160	F3
3161	F8
3162	F4
3163	F1
3164	F3
3165	I9
3166	G8
3167	G3
3168	I9

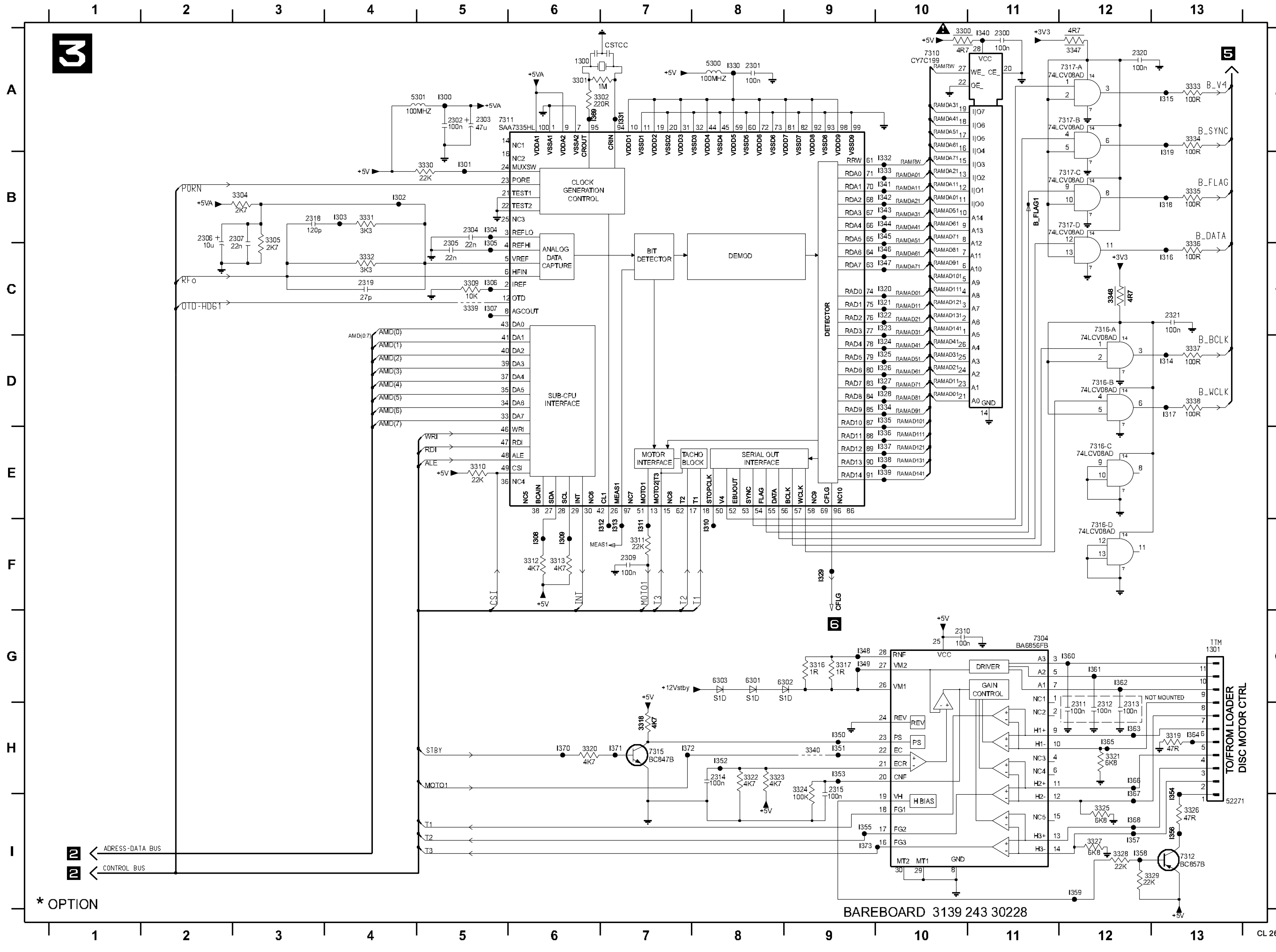
Monoboard


2
7207
SAA7389HL
PCS
CLOCK GEN.
TEST
DEBUG
Sledge control
Radial control
Focus control
Defect detector
Track counter
Signal cond.
OPC
Laser control
ADC/ AGC ref.
P6
Port 5
Port 3
Port 1
8051 core
ROM
RAM
SFR
Port 4
Port 2
Port 0
System interface
7201
74HCT573
7202
M29F002
7203
BC857B
7208
NCP301LSN45
7209
L78L05ACD
7210
BC807-25
7211
BC817-25
ADRESS BUS
BE_INTERFACE
ADRESS_DATA BUS
CONTROL_BUS
RAC-SW
REFSIN
SINPH
REFCOS
COSPH
SL
RA
FO
p93-89
O1
O2
O3
O4
S1
S2
A1_MACE
CALF_MACE
ATIP_IN
ALPHA0
SILD
SICL
TRAYSW
OTD-HD61
CSI
ALE
PSENn
WE
POR
RSTN
+3V3S
+3A
+5V
+12VSTBY
+5V_MOD
* OPTION
BAREBOARD 3139 243 30228
5
3
3
1

1205	A4
2203	A10
2204	B2
2205	B2
2206	C1
2207	D1
2208	D13
2209	D14
2210	D1
2212	H3
2213	H4
2214	H13
2215	H12
2216	H12
2226	A5
2227	A7
2228	A7
2229	I3
3200	A4
3201	A6
3202	A7
3203	A4
3204	A4
3205	B2
3206	B2
3208	C2
3209	C2
3210	C2
3211	D2
3212	D13
3213	D14
3214	D2
3215	D2
3219	F2
3220	F10
3221	F2
3224	H4
3225	H5
3226	H4
3227	H13
3229	H13
3230	H8
3231	H6
3232	H12
3234	I12
3235	I12
3236	H10
3237	H1
3238	I8
3240	B11
3245	A5
3251	H8
3252	H8
3259	A6
3260	A7
3261	H13
3262	I7
3263	I7
3265	I5
3266	I5
3707	I6
5200	A9
6200	H12
7201	D12
7202	D13
7203	H12
7207	A3
7208	I13
7209	I4
7210	I5
7211	I6
I120	D13
I121	E13
I122	E13
I123	F14
I124	H14
I125	H13
I126	H12
I127	H11
I128	I13
I130	D2
I131	G2
I132	H5
I133	I7
I134	I8
I135	E10
I136	D10
I137	B10
I139	H8
I140	I7
I141	I7
I142	I3
I143	I5
I200	B2
I201	B2
I202	B2
I205	C2
I206	C2
I207	C1
I208	C2
I209	D13
I210	D1
I211	D2
I212	D2
I213	E2
I214	F2
I215	F2
I216	G2
I219	D13
I220	H4
I221	H3
I223	H5
I224	H5
I225	H6
I226	H4
I227	H5
I228	H4
I229	D13
I230	H6
I231	H6
I234	H7
I235	H7
I236	I6
I237	I6
I238	I7
I239	E13
I240	A4
I241	A5
I242	A4
I243	A5
I244	A4
I247	H8
I248	H8
I249	E13
I250	A10
I251	A5
I252	A6
I253	A5
I254	A5
I255	A6
I256	A9
I257	A6
I258	A7
I259	E13
I260	B10
I261	B10
I262	C10
I263	C10
I264	C10
I265	C10
I266	C10
I267	C10
I268	D10
I269	E13
I270	D10
I271	D10
I272	D10
I273	D10
I274	E10
I275	E10
I276	E10
I277	E10
I278	E10
I279	H9
I280	F10
I283	B12
I284	B12
I285	F10
I286	H8
I288	H8
I289	H9
I299	H9

CL 26532123_009.eps
031202

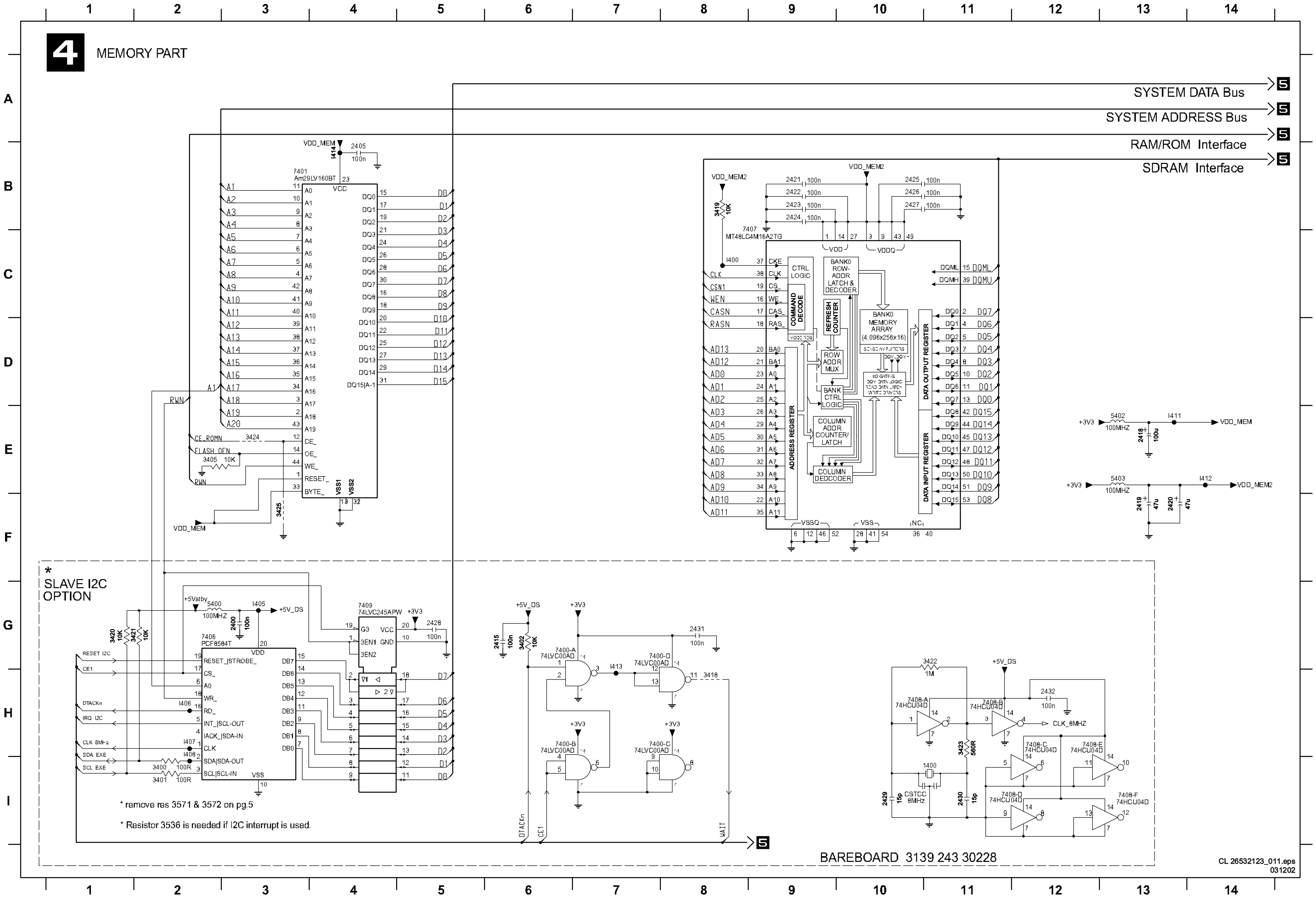
Monoboard


3
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
7311 SAA7335HL
CLOCK GENERATION CONTROL
ANALOG DATA CAPTURE
BIT DETECTOR
DEMOD
DETECTOR
SUB-CPU INTERFACE
MOTOR INTERFACE
TACHO BLOCK
SERIAL OUT INTERFACE
7310 CY7C199
7317-A 74LCV08AD
7317-B 74LCV08AD
7317-C 74LCV08AD
7317-D 74LCV08AD
7316-A 74LCV08AD
7316-B 74LCV08AD
7316-C 74LCV08AD
7316-D 74LCV08AD
B_V4
B_SYNC
B_FLAG
B_DATA
B_BCLK
B_WCLK
B_FLAG1
5
6
CFLG
PORN
RFo
OTD-HD61
AMD(0:7)
WRI
RDI
ALE
CSI
INT
MOTO1
T1
T2
T3
STBY
7304 BA6856FB
DRIVER
GAIN CONTROL
REV
PS
HBIAS
NOT MOUNTED
1301 TTM
52271
TO/FROM LOADER DISC MOTOR CTRL
7315 BC847B
7312 BC857B
6301 S1D
6302 S1D
6303 S1D
+12Vstby
+5V
+5VA
+3V3
2 ADRESS-DATA BUS
2 CONTROL BUS
* OPTION
BAREBOARD 3139 243 30228

CL 26532123_010.eps
031202

1300	A6
1301	G13
2300	A11
2301	A8
2302	A5
2303	A5
2304	B5
2305	C5
2306	B2
2307	B3
2309	F7
2310	G10
2311	H12
2312	H12
2313	H12
2314	H8
2315	H9
2318	B3
2319	C4
2320	A12
2321	C13
3300	A10
3301	A6
3302	A7
3304	B3
3305	B3
3309	C5
3310	E5
3311	F7
3312	F6
3313	F6
3316	G9
3317	G9
3318	H7
3319	H13
3320	H6
3321	H12
3322	H8
3323	H8
3324	H9
3325	I12
3326	I13
3327	I12
3328	I12
3329	I13
3330	B5
3331	B4
3332	C4
3333	A13
3334	A13
3335	B13
3336	C13
3337	D13
3338	D13
3339	C5
3340	H9
3347	A12
3348	C12
5300	A8
5301	A5
6301	G8
6302	G9
6303	G8
7304	G11
7310	A10
7311	A5
7312	I13
7315	H7
7316-A	C12
7316-B	D12
7316-C	E12
7316-D	F12
7317-A	A12
7317-B	A11
7317-C	B11
7317-D	B11
I300	A5
I301	B5
I302	B4
I303	B4
I304	B5
I305	C5
I306	C5
I307	C5
I308	F6
I309	F6
I310	F8
I311	F7
I312	F7
I313	F7
I314	D13
I315	A13
I316	C13
I317	D13
I318	B13
I319	A13
I320	C10
I321	C10
I322	C10
I323	C10
I324	D10
I325	D10
I326	D10
I327	D10
I328	D10
I329	F9
I330	A8
I331	A7
I332	B10
I333	B10
I334	D10
I335	D10
I336	E10
I337	E10
I338	E10
I339	E10

Monoboard

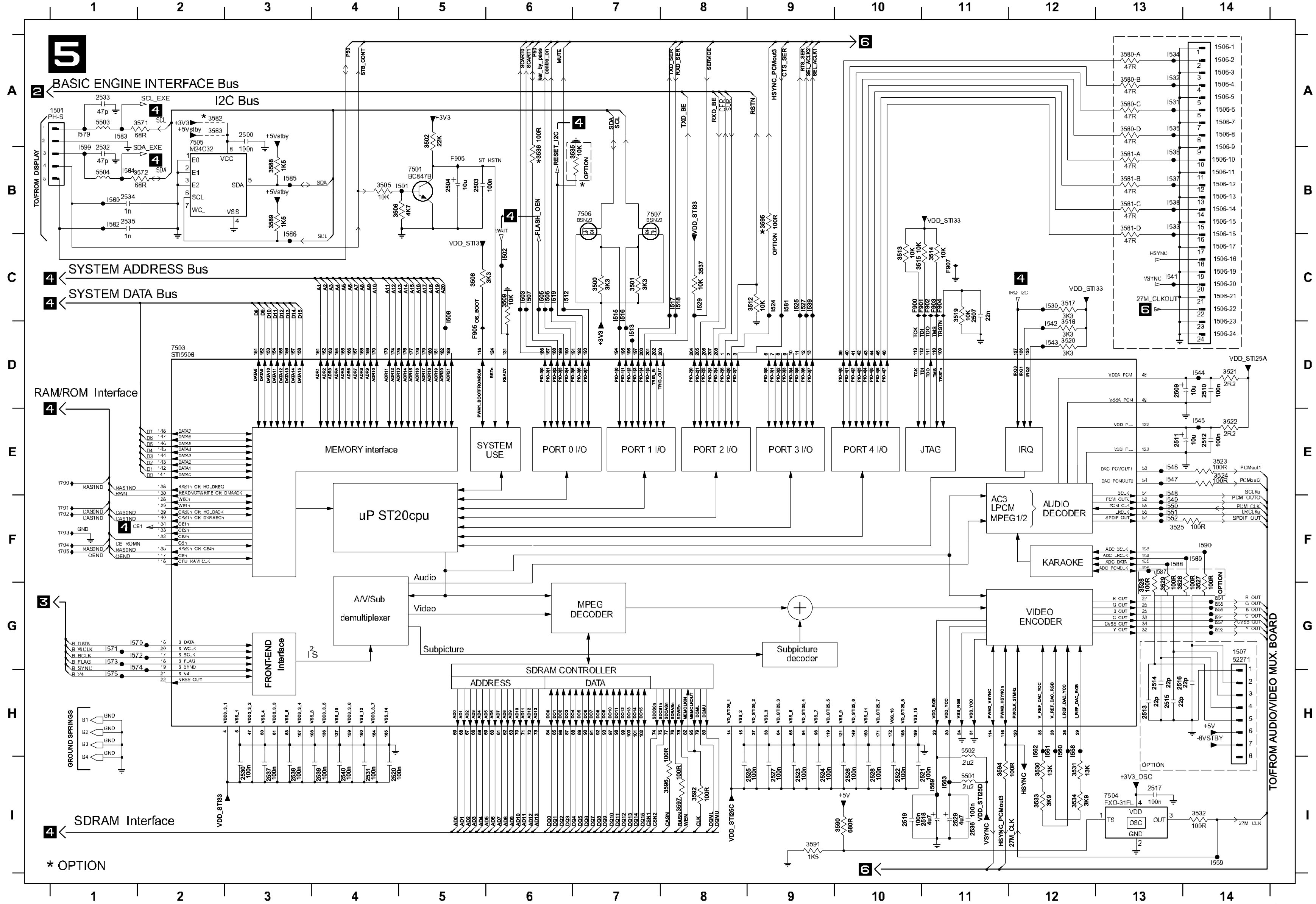

4 MEMORY PART
SYSTEM DATA Bus
SYSTEM ADDRESS Bus
RAM/ROM Interface
SDRAM Interface
5
7401
Am29LV160BT
VDD_MEM
2405 100n
I414
7407
MT48LC4M16A2TG
VDD_MEM2
3419 10K
I400
CTRL LOGIC
COMMAND DECODE
BANK0 ROW-ADDR LATCH & DECODER
REFRESH COUNTER
BANK0 MEMORY ARRAY (4,096x256x16)
ROW ADDR MUX
BANK CTRL LOGIC
COLUMN ADDR COUNTER/ LATCH
COLUMN DEDCODER
ADDRESS REGISTER
DATA OUTPUT REGISTER
DATA INPUT REGISTER
+3V3
5402 100MHZ
2418 100u
I411
VDD_MEM
5403 100MHZ
2419 47u
2420 47u
I412
VDD_MEM2
* SLAVE I2C OPTION
7406
PCF8584T
5400 100MHZ
+5Vstby
2400 100n
I405
+5V_DS
7409
74LVC245APW
2428 100n
3420 10K
3421 10K
RESET I2C
CE1
DTACKn
IRQ I2C
CLK 8MHz
SDA EXE
SCL EXE
3400 100R
3401 100R
I406
I407
I408
7400-A 74LVC00AD
7400-B 74LVC00AD
7400-C 74LVC00AD
7400-D 74LVC00AD
2415 100n
3402 10K
I413
2431 100n
3418
WAIT
7408-A 74HCU04D
7408-B 74HCU04D
7408-C 74HCU04D
7408-D 74HCU04D
7408-E 74HCU04D
7408-F 74HCU04D
3422 1M
3423 560R
2432 100n
CLK_8MHZ
1400 CSTCC 8MHz
2429 15p
2430 15p
BAREBOARD 3139 243 30228
CL 26532123_011.eps
031202

* remove res 3571 & 3572 on pg.5

* Resistor 3536 is needed if I2C interrupt is used.

1400	I11
2400	G3
2405	B4
2415	G6
2418	E13
2419	F13
2420	F13
2421	B9
2422	B9
2423	B9
2424	B9
2425	B10
2426	B10
2427	B10
2428	G5
2429	I10
2430	I11
2431	G8
2432	H12
3400	I2
3401	I2
3402	G6
3405	E2
3418	H8
3419	B8
3420	G1
3421	G1
3422	G11
3423	H11
3424	E3
3425	F3
5400	G2
5402	E13
5403	E13
7400-A	G6
7400-B	H6
7400-C	H7
7400-D	G7
7401	B3
7406	G2
7407	B9
7408-A	H10
7408-B	H11
7408-C	H12
7408-D	I11
7408-E	H12
7408-F	I13
7409	G4
I400	C8
I405	G3
I406	H2
I407	H2
I408	H2
I411	E13
I412	E14
I413	G7
I414	B4

Monoboard


5
BASIC ENGINE INTERFACE Bus
I2C Bus
SYSTEM ADDRESS Bus
SYSTEM DATA Bus
RAM/ROM Interface
SDRAM Interface
TO/FROM DISPLAY
GROUND SPRINGS
7503 STi5508
MEMORY interface
SYSTEM USE
PORT 0 I/O
PORT 1 I/O
PORT 2 I/O
PORT 3 I/O
PORT 4 I/O
JTAG
IRQ
uP ST20cpu
AC3 LPCM MPEG1/2
AUDIO DECODER
KARAOKE
A/V/Sub demultiplexer
Audio
Video
Subpicture
MPEG DECODER
Subpicture decoder
VIDEO ENCODER
FRONT-END Interface
SDRAM CONTROLLER
ADDRESS
DATA
7505 M24C32
7501 BC847B
7506 BSN20
7507 BSN20
7504 FXO-31FL
OSC
1507 52271
OPTION
TO/FROM AUDIO/VIDEO MUX. BOARD
* OPTION

G1	H1
G2	H1
G3	H1
G4	H1
1501	A1
1506-1	A14
1506-10	B14
1506-11	B14
1506-12	B14
1506-13	B14
1506-14	B14
1506-15	B14
1506-16	C14
1506-17	C14
1506-18	C14
1506-19	C14
1506-2	A14
1506-20	C14
1506-21	C14
1506-22	C14
1506-23	D14
1506-24	D14
1506-3	A14
1506-4	A14
1506-5	A14
1506-6	A14
1506-7	A14
1506-8	A14
1506-9	B14
1507	G14
1700	E1
1701	F1
1702	F1
1703	F1
1704	F1
1705	F1
2500	A3
2503	B5
2504	B5
2507	C11
2509	D13
2510	D14
2511	E13
2512	E14
2513	H13
2514	H13
2515	H13
2516	H13
2517	I13
2518	I11
2519	I10
2520	I4
2521	I11
2522	I10
2523	I9
2524	I9
2525	I9
2526	I10
2527	I9
2528	I10
2529	I11
2530	I3
2531	I4
2532	B1
2533	A1
2534	B1
2535	B1
2536	I11
2537	I3
2538	I3
2539	I4
2540	I4
3500	C7
3501	C7
3502	A5
3505	B4
3506	B4
3508	C5
3509	C6
3512	C9
3513	C10
3514	C11
3515	C10
3517	C12
3518	D12
3519	C11
3520	D12
3521	D14
3522	E14
3523	E14
3524	E14
3525	F13
3526	G13
3527	G14
3528	G13
3529	G13
3530	I12
3531	I12
3532	I14
3533	I12
3534	I12
3535	B7
3536	B6
3537	C8
3571	A2
3572	B2
3580-A	A13
3580-B	A13
3580-C	A13
3580-D	A13
3581-A	B13
3581-B	B13
3581-C	B13
3581-D	B13
3582	A2
3583	A2
3588	B3
3589	B3
3590	I10
3591	I9
3592	I8
3594	I11
3595	B9
3596	I8
3597	I8
5501	I11
5502	H11
5503	A1
5504	B1
7501	B5
7503	D2
7504	I13
7505	A2
7506	B7
7507	B8
F900	C10
F901	C10
F902	C11
F903	C11
F904	C11
F905	D5
F906	B5
F907	C11
I501	B5
I502	C6
I503	C6
I505	C6
I506	C6
I507	C6
I508	C5
I512	C6
I513	D7
I515	C7
I516	C7
I517	C8
I518	C8
I519	C6
I524	C9
I525	C9
I527	C9
I529	C8
I530	C12
I531	A13
I532	A13
I533	B13
I534	A13
I535	A13
I536	B13
I537	B13
I538	B13
I539	C9
I541	C13
I542	D12
I543	D12
I544	D14
I545	E14
I546	E13
I547	E13
I548	F13
I549	F13
I550	F13
I551	F13
I552	F13
I554	G14
I555	G14
I556	G14
I557	G14
I558	H12
I559	I14
I560	H12
I561	H12
I562	H12
I563	I11
I569	I11
I570	G1
I571	G1
I572	G1
I573	G1
I574	H1
I575	H1
I579	A1
I580	B1
I581	C9
I582	B1
I583	A1
I584	B1
I585	B3
I586	C3
I587	F13
I588	F13
I589	F14
I590	F14
I591	G14
I592	G14
I599	B1

CL 26532123_012.eps
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Project	Loc. 7503	Remarks	Digital YUV Option	Karaoke Option	PLL_CLK chip Option	PLL Rework Issue
SD3.0	Sti5508/Cut 1.6	Replace 5505	Insert Conn 1506 & R-pk 3580/1	Insert Conn 1507, res 3526-9 & caps 2513-6	As is	Remove 3521; replace 2510 w. jumper
SD3.0	Sti5508/Cut 2.0	Replace 5505	Insert Conn 1506, R-pk 3580/1 & R3707	Insert Conn 1507, res 3526-9 & caps 2513-6	Don't Insert 7616, 5612, 3696-99, 3703, 2618 & 2646	No Rework
SD3.1	Sti5580	DTS Decoding, PCM_OUT3	Insert Conn 1506, R-pk 3580/1 & R3707	Insert Conn 1507, res 3526-9 & caps 2513-6	Don't Insert 7616, 5612, 3696-99, 3703, 2618 & 2646	No Rework
SD3.3	Sti5519	5508 minus Karaoke	Insert Conn 1506, R-pk 3580/1 & R3707	No Karaoke	Don't Insert 7616, 5612, 3696-99, 3703, 2618 & 2646	No Rework

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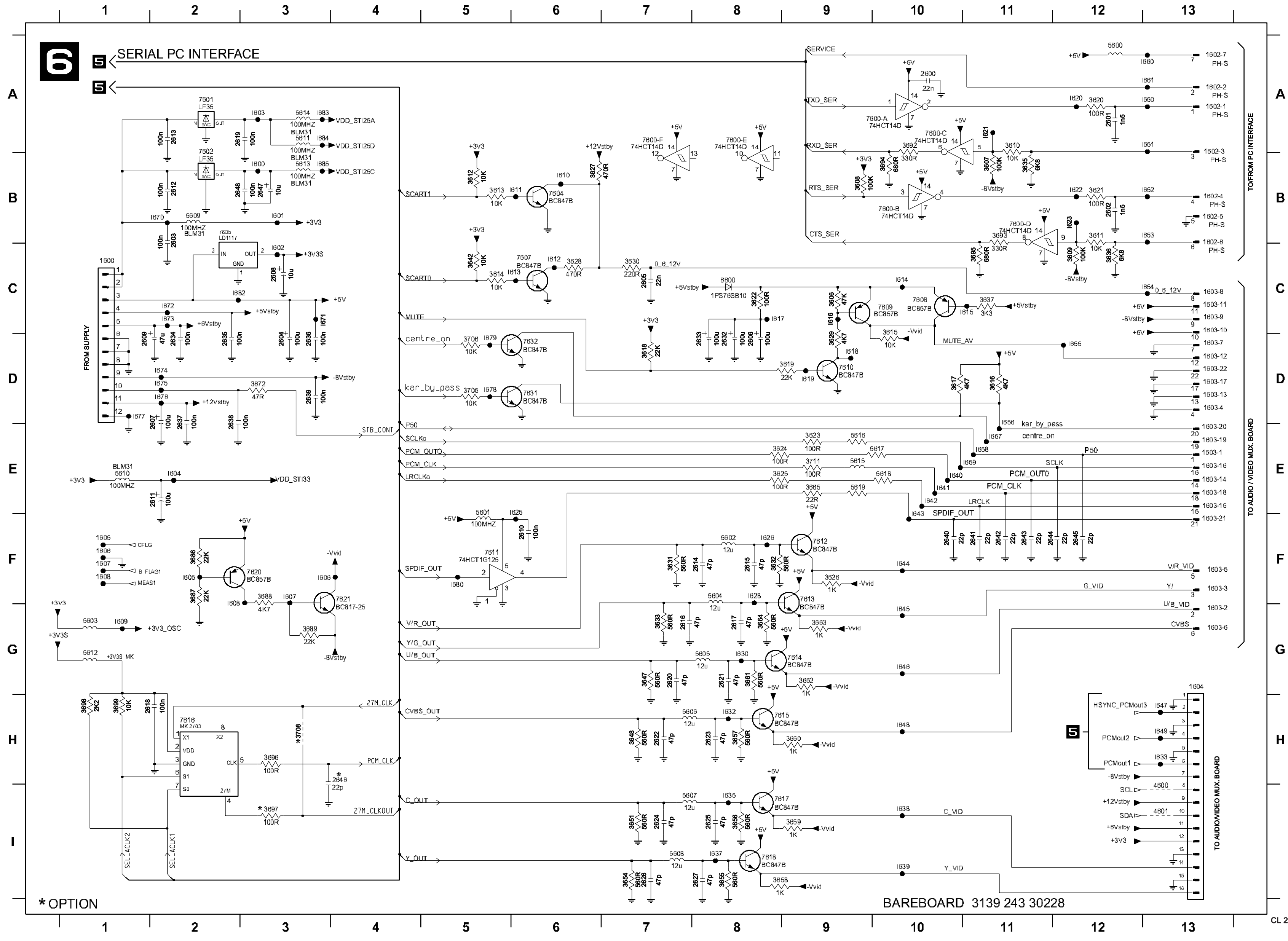
Monoboard

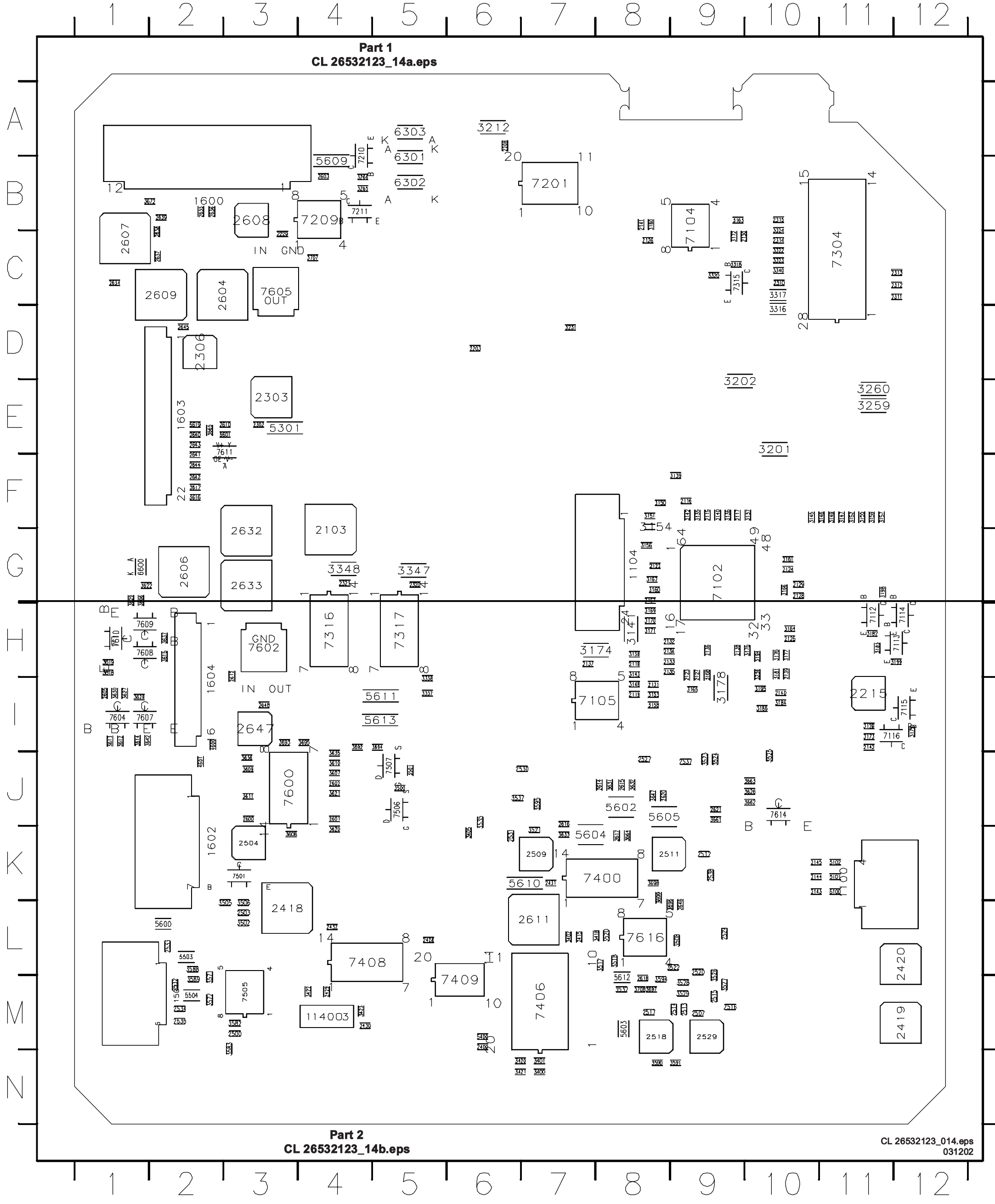

6
SERIAL PC INTERFACE
5
FROM SUPPLY
TO/FROM PC INTERFACE
TO AUDIO / VIDEO MUX. BOARD
TO AUDIO/VIDEO MUX. BOARD
SERVICE
TXD_SER
RXD_SER
RTS_SER
CTS_SER
SCART1
SCART0
MUTE
centre_on
kar_by_pass
STB_CONT
P50
SCLKo
PCM_OUT0
PCM_CLK
LRCLKo
SPDIF_OUT
V/R_OUT
Y/G_OUT
U/B_OUT
27M_CLK
CVBS_OUT
PCM_CLK
27M_CLKOUT
C_OUT
Y_OUT
SEL_ACLK2
SEL_ACLK1
VDD_STI25A
VDD_STI25D
VDD_STI25C
VDD_STI33
+3V3_OSC
CFLG
B_FLAG1
MEAS1
MUTE_AV
0_6_12V
SCLK
PCM_OUT0
PCM_CLK
LRCLK
SPDIF_OUT
V/R_VID
G_VID
Y/
U/B_VID
CVBS
C_VID
Y_VID
HSYNC_PCMout3
PCMout2
PCMout1
-8Vstby
SCL
SDA
+12Vstby
+5Vstby
+3V3
7600-A 74HCT14D
7600-B 74HCT14D
7600-C 74HCT14D
7600-D 74HCT14D
7600-E 74HCT14D
7600-F 74HCT14D
7601 LF35
7602 LF35
7605 LD1117
7604 BC847B
7607 BC847B
7608 BC857B
7609 BC857B
7610 BC847B
7611 74HCT1G125
7612 BC847B
7613 BC847B
7614 BC847B
7615 BC847B
7616 MK2703
7617 BC847B
7618 BC847B
7620 BC857B
7621 BC817-25
7631 BC847B
7632 BC847B
6600 1PS76SB10
1600
1602-1 … 1602-7 PH-S
1603-1 … 1603-22
1604
A B C D E F G H I
1 2 3 4 5 6 7 8 9 10 11 12 13
*OPTION
BAREBOARD 3139 243 30228

1600	C1	3656	I8
1602-1	A13	3657	H8
1602-2	A13	3658	I8
1602-3	B13	3659	I9
1602-4	B13	3660	H9
1602-5	B13	3661	G8
1602-6	C13	3662	G9
1602-7	A13	3663	G9
1603-1	E13	3664	G8
1603-10	C13	3665	E9
1603-11	C13	3672	D3
1603-12	D13	3686	F2
1603-13	D13	3687	F2
1603-14	E13	3688	F3
1603-15	E13	3689	G3
1603-16	E13	3692	A10
1603-17	D13	3693	B11
1603-18	E13	3694	B10
1603-19	E13	3695	C11
1603-2	G13	3696	H3
1603-20	E13	3697	I3
1603-21	F13	3698	H1
1603-22	D13	3699	H1
1603-3	F13	3705	D5
1603-4	D13	3706	D5
1603-5	F13	3708	H3
1603-6	G13	3711	E9
1603-7	D13	4600	I13
1603-8	C13	4601	I13
1603-9	C13	5600	A12
1604	G13	5601	F5
1605	F1	5602	F8
1606	F1	5603	G1
1607	F1	5604	F8
1608	F1	5605	G8
2600	A10	5606	H7
2601	A12	5607	I7
2602	B12	5608	I7
2603	B2	5609	B2
2604	D3	5610	E1
2605	C7	5611	A3
2606	D8	5612	G1
2607	D2	5613	B3
2608	C3	5614	A3
2609	D1	5615	E9
2610	F6	5616	E9
2611	E2	5617	E10
2612	B2	5618	E10
2613	A2	5619	E9
2614	F8	6600	C8
2615	F8	7600-A	A9
2616	G7	7600-B	B10
2617	G8	7600-C	A10
2618	H1	7600-D	B11
2619	A2	7600-E	A8
2620	G7	7600-F	A7
2621	G8	7601	A2
2622	H7	7602	B2
2623	H8	7604	B6
2624	I7	7605	B2
2625	I8	7607	C6
2626	I7	7608	C10
2627	I8	7609	C10
2632	D8	7610	D9
2633	D8	7611	F5
2634	D2	7612	F9
2635	D2	7613	F9
2636	D3	7614	G9
2637	D2	7615	H8
2638	D2	7616	H2
2639	D3	7617	I8
2640	F10	7618	I8
2641	F11	7620	F3
2642	F11	7621	F4
2643	F11	7631	D6
2644	F11	7632	D6
2645	F12	I600	B3
2646	H4	I601	B3
2647	B3	I602	C3
2648	B2	I603	A3
3606	C9	I604	E2
3607	B11	I605	F2
3608	B9	I606	F3
3609	C12	I607	F3
3610	A11	I608	G2
3611	B12	I609	G1
3612	B5	I610	B6
3613	B5	I611	B6
3614	C5	I612	C6
3615	D10	I613	C6
3616	D11	I614	C10
3617	D10	I615	C11
3618	D7	I616	C9
3619	D9	I617	C8
3620	A12	I618	D9
3621	B12	I619	D9
3622	C8	I620	A12
3623	E9	I621	A11
3624	E8	I622	B12
3625	E8	I623	B12
3626	F9	I625	F6
3627	B6	I626	F8
3628	C6	I628	F8
3629	D9	I630	G8
3630	C7	I632	H8
3631	F7	I633	H13
3632	F8	I635	I8
3633	G7	I637	I8
3635	B11	I638	I10
3636	C12	I639	I10
3637	C11	I640	E10
3642	C5	I641	E10
3647	G7	I642	E10
3648	H7	I643	F10
3651	I7	I644	F10
3654	I7	I645	G10
3655	I8	I646	G10

CL 26532123_013.eps
031202

The components in the "Option A" block ie. x'tor 7630, res. 3700, 3701 are not required anymore.
It was originally used in the Gapfiller project.

Layout Monoboard (Overview Top Side)


1
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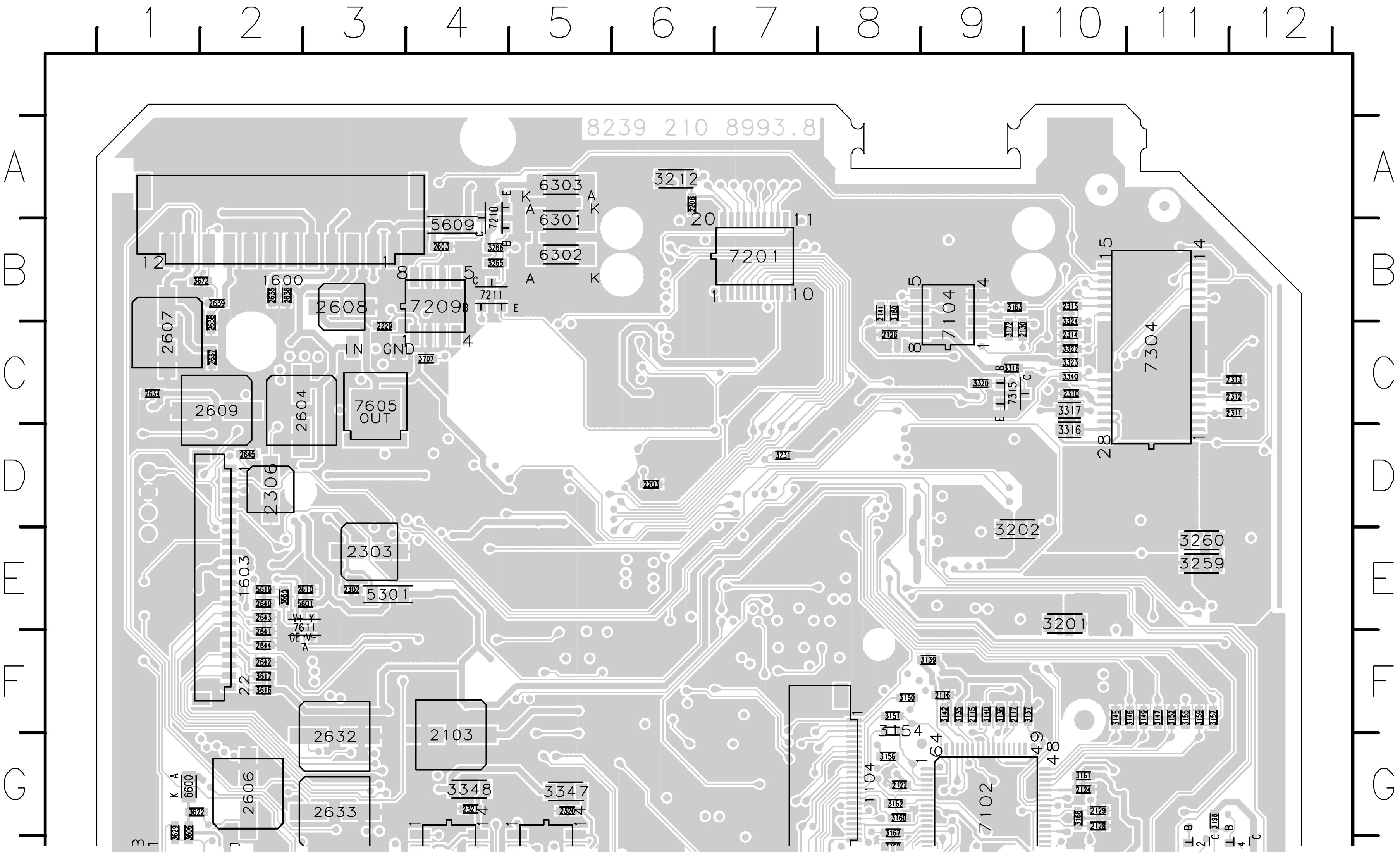
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
K
L
M
N
Part 1
CL 26532123_14a.eps
Part 2
CL 26532123_14b.eps
CL 26532123_014.eps
031202
1600
2607
2608
7209
2609
2604
7605
OUT
IN
GND
5609
6303
6301
6302
3212
7201
7104
7304
2306
1603
2303
5301
3202
3260
3259
3201
2632
2103
2606
2633
3348
3347
1104
3154
7102
7316
7317
GND
7602
1604
3174
7105
3178
2215
5611
5613
2647
7600
5602
5605
5604
7614
2504
2509
7400
2511
1602
2418
5610
2611
7616
1100
7408
7409
7406
2420
7505
114003
2518
2529
2419
5600
5603

1100	K11	2618	M8	3500	J5	7112	H11
1104	G8	2620	J8	3501	J5	7113	H12
1400	M4	2621	J9	3502	L3	7114	H12
1501	M2	2632	G3	3505	L3	7115	I12
1600	B2	2633	G3	3506	L3	7116	I11
1602	K2	2634	C1	3508	L9	7201	B7
1603	E2	2635	B2	3517	L8	7209	B4
1604	I2	2636	B2	3518	L8	7210	A4
2103	G4	2637	C2	3520	L8	7211	B4
2115	F9	2638	C2	3521	K7	7304	C11
2116	F9	2639	B2	3522	L9	7315	C9
2117	F9	2640	E2	3523	J9	7316	H4
2118	H8	2641	F2	3524	J9	7317	H5
2119	I8	2642	F2	3525	J10	7400	K8
2122	G8	2643	E2	3526	M9	7406	M7
2123	H9	2644	F2	3527	M9	7408	L4
2124	G10	2645	D2	3528	M9	7409	M6
2125	H10	2646	L9	3529	M9	7501	K3
2126	C8	2647	I3	3532	M8	7505	M3
2127	H9	2648	I3	3535	J6	7506	J5
2128	G10	3120	I11	3537	J6	7507	J5
2129	G10	3135	F9	3571	M2	7600	J3
2130	C9	3136	F9	3572	M2	7602	H3
2131	I8	3137	F10	3582	M3	7604	I1
2132	H8	3138	H8	3583	M3	7605	C3
2133	H8	3139	F9	3588	L2	7607	I1
2134	H8	3140	F9	3589	M2	7608	H1
2135	H8	3141	H8	3590	N8	7609	H1
2136	H9	3142	F9	3591	N9	7610	H1
2137	H7	3143	H8	3594	M8	7611	E3
2138	H9	3145	F10	3595	J7	7614	J10
2139	H10	3146	F11	3606	G1	7616	L8
2140	I10	3147	F11	3607	J4		
2141	B8	3148	I8	3608	K3		
2142	I11	3149	F11	3609	J3		
2143	K10	3150	F8	3610	J4		
2144	K10	3151	F8	3611	J3		
2145	K10	3152	F11	3612	I1		
2203	D6	3153	I8	3613	I1		
2208	A6	3154	F8	3614	I1		
2215	I11	3155	F11	3615	H2		
2229	C3	3156	G8	3616	F2		
2302	E3	3157	F11	3617	F2		
2303	E3	3158	I8	3618	H1		
2306	D2	3159	F11	3619	H1		
2310	C10	3160	G8	3620	K4		
2311	C12	3161	G10	3621	J4		
2312	C12	3162	G8	3622	G1		
2313	C12	3163	B9	3626	J10		
2314	C10	3164	H10	3627	I1		
2315	B10	3165	I9	3628	I1		
2320	G5	3166	G10	3629	G1		
2321	G4	3167	G8	3630	I1		
2400	M6	3168	H9	3631	J8		
2415	L7	3169	H8	3632	J8		
2418	L3	3170	H8	3633	K7		
2419	M12	3171	H8	3635	J4		
2420	L12	3172	C9	3636	J3		
2428	L5	3173	I11	3637	H2		
2429	M4	3174	H8	3642	I1		
2430	M4	3175	H10	3647	J8		
2431	K7	3176	H10	3661	J9		
2432	L4	3177	H10	3662	J10		
2500	M3	3178	I9	3663	J10		
2503	L3	3179	I12	3664	K8		
2504	K3	3180	B8	3665	E2		
2507	M9	3181	H10	3672	B2		
2509	K7	3182	H11	3692	I4		
2511	K8	3183	H11	3693	I3		
2512	K9	3184	I10	3694	I5		
2513	M9	3186	I10	3695	I4		
2514	M9	3194	H10	3696	L8		
2515	M9	3195	I10	3697	M8		
2516	M9	3198	G11	3698	K8		
2517	M8	3199	H12	3699	K8		
2518	M8	3201	E10	3707	C4		
2520	L9	3202	E9	3708	M8		
2524	L9	3212	A6	4600	I2		
2527	J8	3231	D7	4601	J2		
2529	M9	3236	H10	5100	K11		
2530	J7	3259	E11	5101	K11		
2531	K6	3260	E11	5102	K11		
2532	M2	3265	B4	5301	E3		
2533	L2	3266	B4	5400	M6		
2534	M2	3316	D10	5503	L2		
2535	M2	3317	C10	5504	M2		
2537	J9	3318	C9	5600	L2		
2538	K9	3320	C9	5601	E3		
2600	J3	3322	C10	5602	J8		
2601	J4	3323	C10	5603	M8		
2602	J4	3324	B10	5604	K7		
2603	B4	3337	I5	5605	J8		
2604	C2	3338	I5	5609	B4		
2605	I1	3340	C10	5610	K7		
2606	G2	3347	G5	5611	I5		
2607	C1	3348	G4	5612	M8		
2608	B3	3400	N7	5613	I5		
2609	C2	3401	N7	5619	E2		
2610	E3	3402	L7	6301	B5		
2611	L7	3405	K6	6302	B5		
2612	H3	3418	L8	6303	A5		
2614	J8	3420	N6	6600	G1		
2615	J8	3421	N6	7102	G9		
2616	J7	3422	M4	7104	B9		
2617	K8	3423	M4	7105	I8		

Layout Monoboard (Part 1 Top Side)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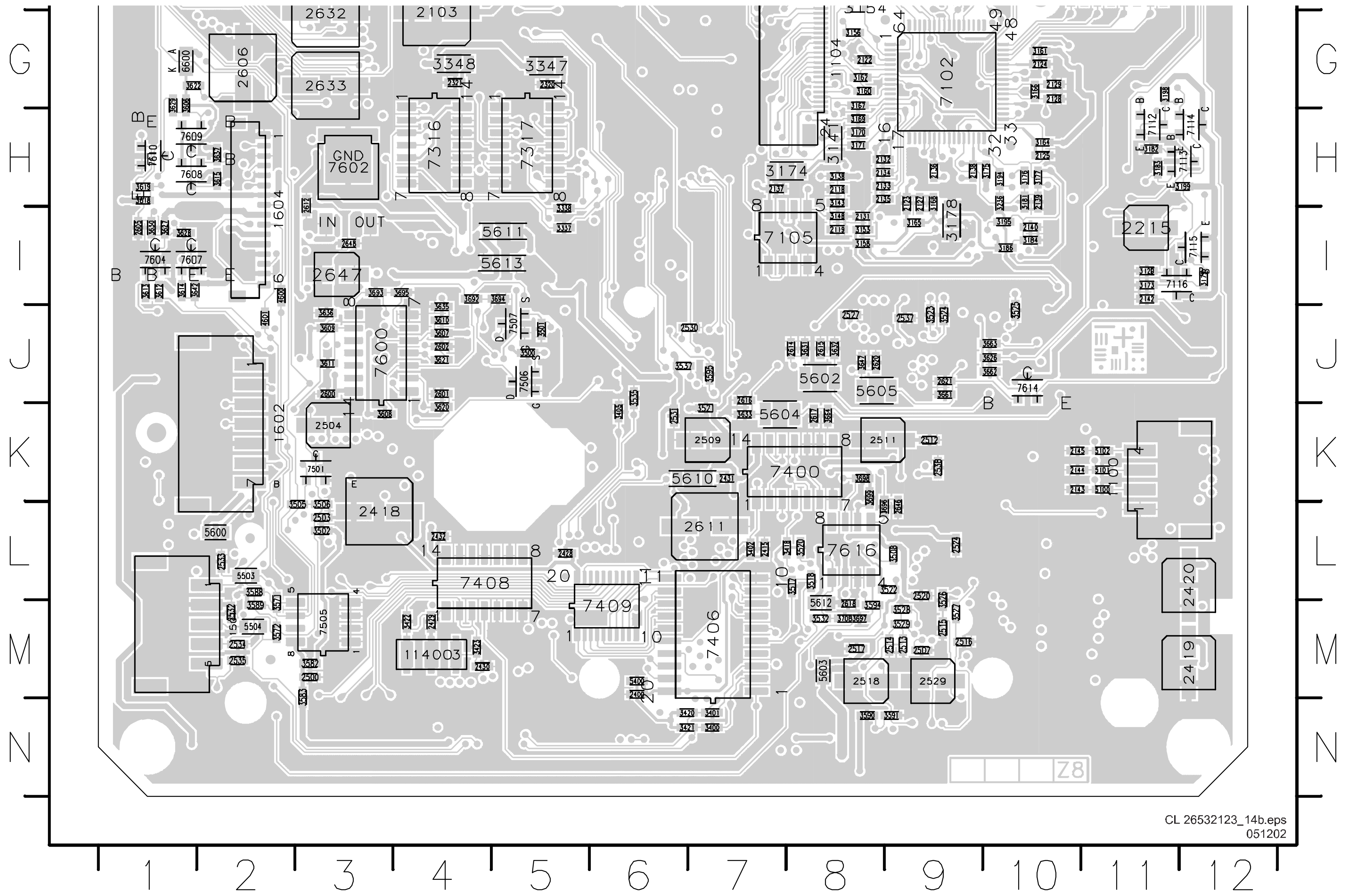
CL 26532123_14a.eps
051202

Layout Monoboard (Part 2 Top Side)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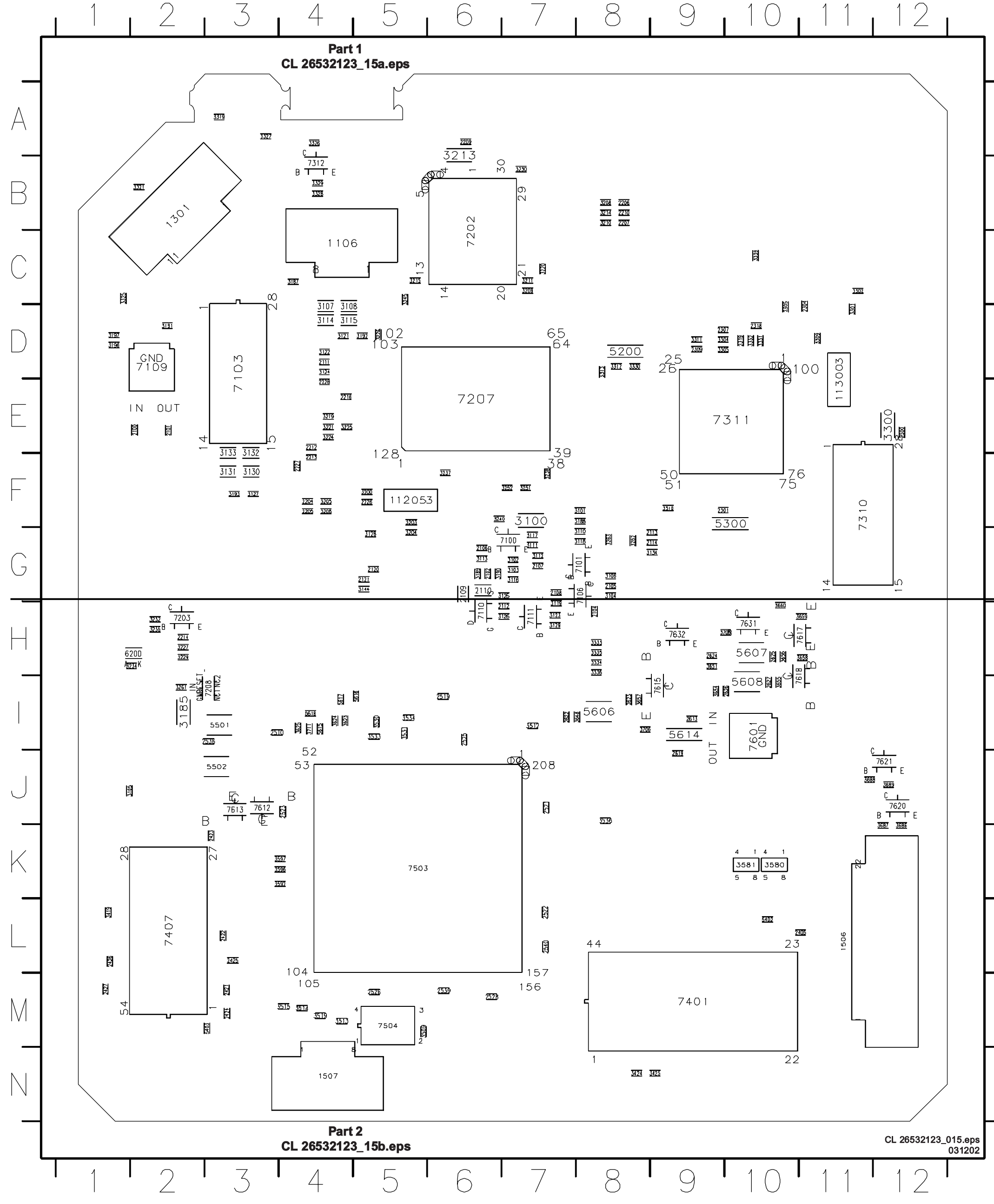
CL 26532123_14b.eps
051202

Layout Monoboard (Overview Bottom Side)



Part 1
CL 26532123_15a.eps

Part 2
CL 26532123_15b.eps

CL 26532123_015.eps
031202

1106	C4
1205	F5
1300	E11
1301	B2
1506	L11
1507	N4
2100	E2
2101	E2
2102	G6
2104	H8
2105	G8
2106	G6
2107	G7
2108	G7
2109	G6
2110	G6
2111	D4
2112	H7
2113	G9
2114	G9
2120	G5
2121	G5
2204	F4
2205	F4
2206	B8
2207	B8
2209	A6
2210	B8
2212	E4
2213	F4
2214	H2
2216	E4
2226	F5
2227	F4
2228	E4
2300	E12
2301	F9
2304	D11
2305	D10
2307	D9
2309	D9
2318	D10
2319	D10
2405	L11
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2422	L3
2423	K3
2424	M3
2425	L3
2426	L1
2427	M1
2510	I3
2519	I6
2521	J7
2522	L7
2523	J4
2525	I6
2526	M5
2528	M6
2536	I3
2539	M6
2540	L7
2613	I9
2619	J9
2622	I7
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2625	H10
2626	I10
2627	I10
3100	F7
3101	F8
3102	G7
3103	G7
3104	G8
3105	J1
3106	G8
3107	D4
3108	D4
3110	G8
3111	G7
3112	G7
3113	G6
3114	D4
3115	D4
3116	G7
3117	G7
3118	G8
3119	H7
3121	D4
3122	D4
3123	H7
3124	D4
3125	G7
3126	H7
3127	F3
3128	G5
3129	H7
3130	F3
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3188	F8
3189	G6
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3191	D2
3192	D5
3193	F3
3196	D1
3197	D1
3200	F5
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3204	G5
3205	F4
3206	F4
3208	B8
3209	C7
3210	B8
3211	C7
3213	A6
3214	B8
3215	C5
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3220	C7
3221	E4
3224	E4
3225	E4
3226	D5
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3229	H2
3230	B7
3232	H2
3234	H2
3235	H2
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3238	F7
3240	F6
3245	C5
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3261	I2
3262	G8
3263	G8
3300	E12
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3309	D11
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3311	D9
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3313	D8
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3325	C1
3326	A4
3327	A3
3328	B4
3329	B4
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3332	D10
3333	H8
3334	H8
3335	H8
3336	H8
3339	C10
3419	L1
3424	N8
3425	N9
3509	M5
3512	I7
3513	M4
3514	M4
3515	M4
3519	M4
3530	I5
3531	I5
3533	I5
3534	I5
3536	J8
3580	K10
3581	K10
3592	K4
3596	K4
3597	K4
3623	I4
3624	I4
3625	I4
3648	I8
3651	H9
3654	I9
3655	I10
3656	H10
3657	I8
3658	H11
3659	H11
3660	H10
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3688	J11
3689	J12
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3711	I4
5200	D8
5300	F10
5402	L10
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5501	I3
5502	J3
5606	I8
5607	H10
5608	I10
5614	I9
5615	I4
5616	I5
5617	I4
5618	I4
6200	H2
7100	G7
7101	G8
7103	D3
7106	G8
7109	D2
7110	H6
7111	H7
7202	C6
7203	H2
7207	E6
7208	I3
7310	F11
7311	E10
7312	B4
7401	M9
7407	L2
7503	K5
7504	M5
7601	I10
7612	J3
7613	J3
7615	I9
7617	H11
7618	I11
7620	J12
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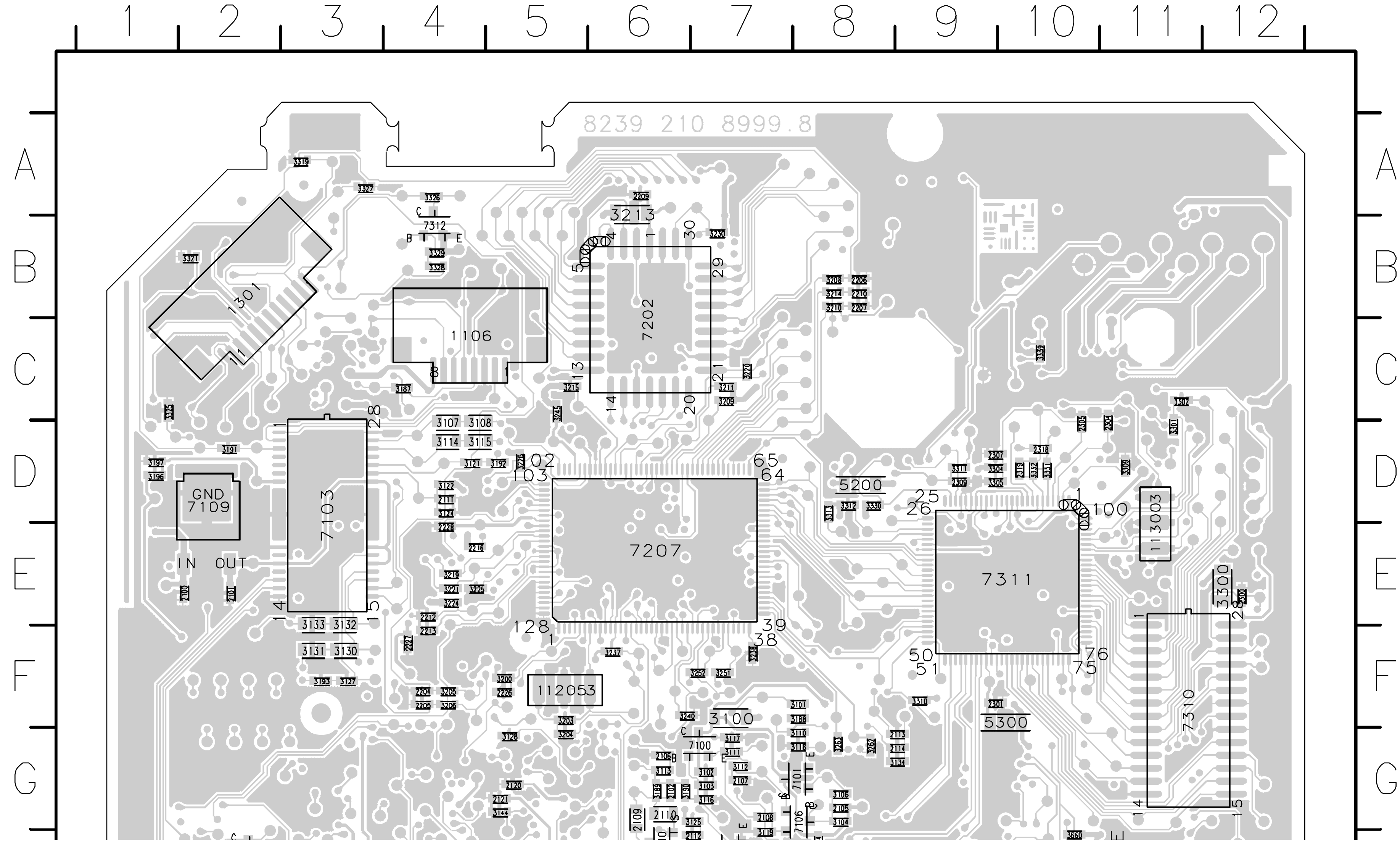
7631	H10
7632	H9

Layout Monoboard (Part 1 Bottom Side)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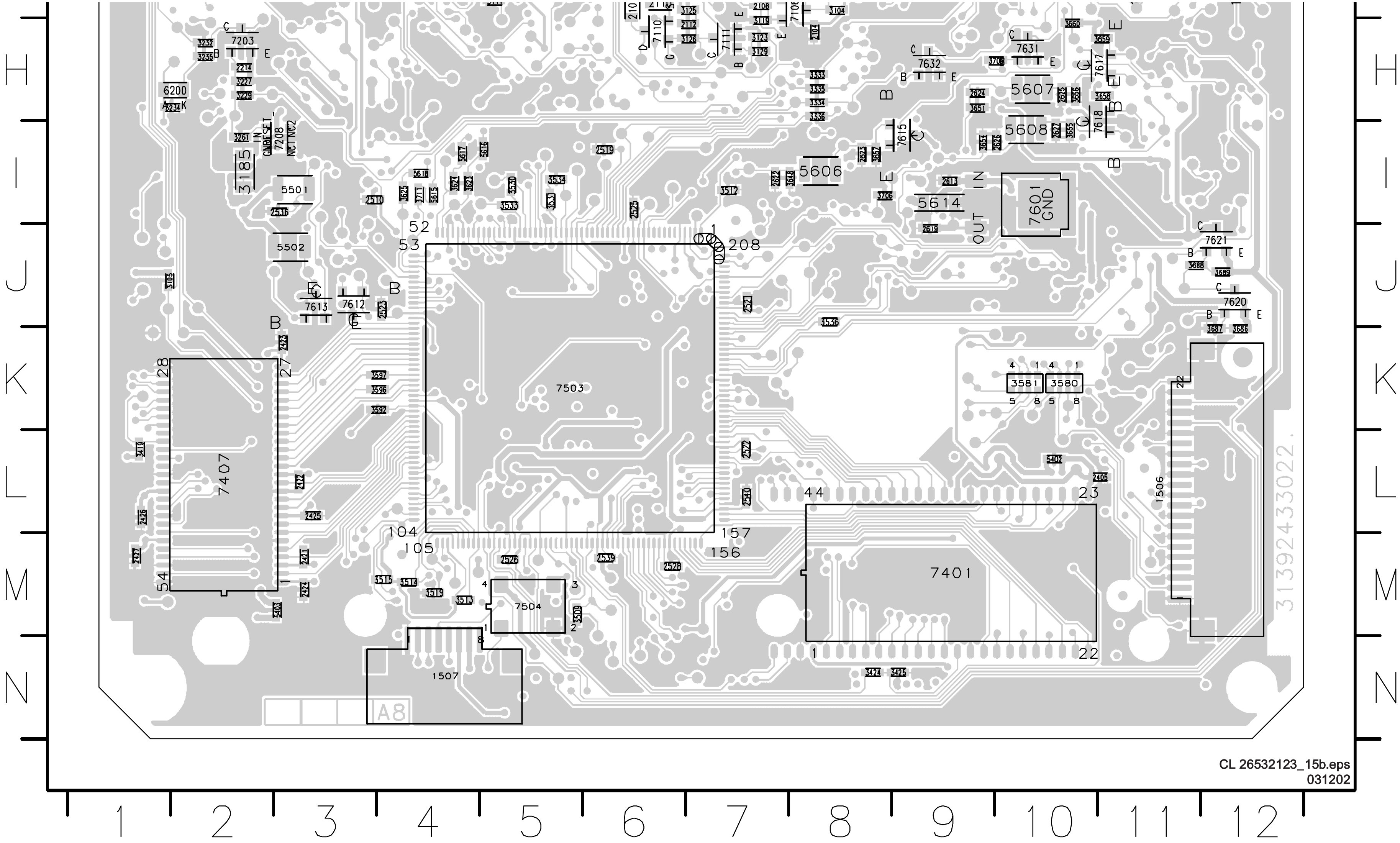
Layout Monoboard (Part 2 Bottom Side)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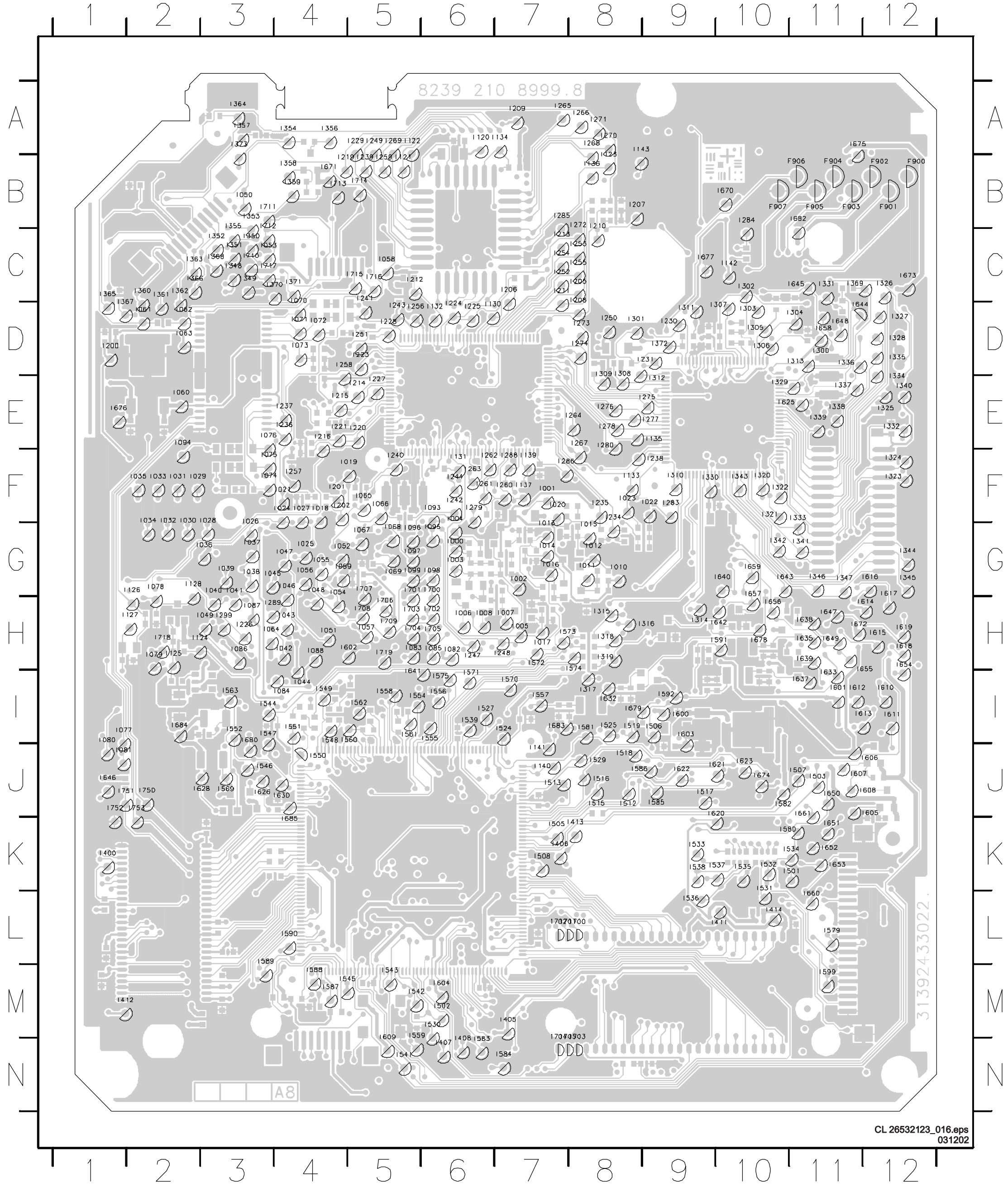
Testpoints Monoboard (Bottom Side)



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1606	D12	I086	H3	I279	F6	I516	J8	I646	J1
1607	D12	I087	H3	I280	E8	I517	J9	I647	H11
1608	E12	I088	H4	I283	F9	I518	J8	I648	D11
1700	L8	I093	F6	I284	C10	I519	I8	I649	H11
1701	L7	I094	F2	I285	C7	I524	I7	I650	J11
1702	L7	I095	G6	I286	F7	I525	I8	I651	K11
1703	N8	I096	G5	I288	F7	I527	I6	I652	K11
1704	N7	I097	G5	I289	H3	I529	J8	I653	K11
1705	N7	I098	G6	I299	H3	I530	N6	I654	I12
F900	B12	I099	G5	I300	D11	I531	L10	I655	H11
F901	B12	I120	A6	I301	D8	I532	K10	I656	H10
F902	B12	I121	B5	I302	C10	I533	K9	I657	H10
F903	B11	I122	A5	I303	D10	I534	K11	I658	D11
F904	B11	I123	B8	I304	D11	I535	K10	I659	G10
F905	B11	I124	H2	I305	D10	I536	L9	I660	L11
F906	B11	I125	H2	I306	D10	I537	K10	I661	J11
F907	B10	I126	H2	I307	D10	I538	K9	I670	B10
I001	F7	I127	H2	I308	E8	I539	I6	I671	B4
I002	G7	I128	H2	I309	E8	I541	N5	I672	H11
I003	G6	I130	D6	I310	F9	I542	M5	I673	C12
I004	G6	I131	F6	I311	D9	I543	M5	I674	J10
I005	H7	I132	D6	I312	D8	I544	I3	I675	B11
I006	H6	I133	F8	I313	D11	I545	M4	I676	E1
I007	H7	I134	A7	I314	H9	I546	J3	I677	C9
I008	H6	I135	E8	I315	H8	I547	J3	I678	H10
I009	G6	I136	B8	I316	H8	I548	I4	I679	I9
I010	G8	I137	F7	I317	I8	I549	I4	I680	J3
I011	G8	I139	F7	I318	H8	I550	J4	I682	C11
I012	G8	I140	J7	I319	H8	I551	I4	I683	I7
I013	G7	I141	J7	I320	F10	I552	I3	I684	I2
I014	G7	I142	C10	I321	F10	I554	I5	I685	J4
I015	G8	I143	B8	I322	F10	I555	I6	I700	H6
I016	G7	I200	D1	I323	F12	I556	I6	I701	H5
I017	H7	I201	F4	I324	F12	I557	I7	I702	H6
I018	F4	I202	F4	I325	E12	I558	I5	I703	H5
I019	F5	I205	C8	I326	C12	I559	N5	I704	H5
I020	F7	I206	D7	I327	D12	I560	I5	I705	H6
I021	F4	I207	B8	I328	D12	I561	I5	I706	H5
I022	F9	I208	D8	I329	E11	I562	I5	I707	H5
I023	F8	I209	A7	I330	F9	I563	I3	I708	H5
I024	F4	I210	C8	I331	C11	I569	J3	I709	H5
I025	G4	I211	D7	I332	E12	I570	I7	I710	C3
I026	G3	I212	C5	I333	G11	I571	I6	I711	B3
I027	F4	I213	C7	I334	E12	I572	H7	I712	C3
I028	G3	I214	E5	I335	D12	I573	H7	I713	B4
I029	F2	I215	E4	I336	D11	I574	H8	I714	B5
I030	G2	I216	F4	I337	E11	I575	I6	I715	C5
I031	F2	I219	B4	I338	E11	I579	L11	I716	C5
I032	G2	I220	E5	I339	E11	I580	K11	I717	C3
I033	F2	I221	E4	I340	E12	I581	I8	I718	H2
I034	G2	I223	D5	I341	G11	I582	J10	I719	H5
I035	F2	I224	D6	I342	G10	I583	N6	I750	J2
I036	G3	I225	D6	I343	F10	I584	N7	I751	J1
I037	G3	I226	H3	I344	G12	I585	J9	I752	K1
I038	G3	I227	E5	I345	G12	I586	J9	I753	K2
I039	G3	I228	D5	I346	G11	I587	M4		
I040	H3	I229	A5	I347	G11	I588	M4		
I041	H3	I230	D9	I348	C3	I589	M3		
I042	H4	I231	D9	I349	C3	I590	L4		
I043	H4	I234	G8	I350	C3	I591	H10		
I044	I4	I235	F8	I351	C3	I592	I9		
I045	G3	I236	E4	I352	C3	I599	M11		
I046	H4	I237	E4	I353	C3	I600	I9		
I047	G4	I238	F8	I354	A4	I601	I11		
I048	H4	I239	B5	I355	C3	I602	H5		
I049	H3	I240	F5	I356	A4	I603	J9		
I050	B3	I241	D5	I357	A3	I604	M6		
I051	H4	I242	F6	I358	B4	I605	J11		
I052	G4	I243	D5	I359	B4	I606	J11		
I053	C3	I244	F6	I360	D2	I607	J11		
I054	H4	I247	H6	I361	D2	I608	J11		
I055	G4	I248	H7	I362	D2	I609	N5		
I056	G4	I249	A5	I363	C2	I610	I12		
I057	H5	I250	D8	I364	A3	I611	I12		
I058	C5	I251	D5	I365	D1	I612	I11		
I059	G4	I252	C7	I366	C2	I613	I12		
I060	E2	I253	C8	I367	D1	I614	H12		
I061	D2	I254	C7	I368	C3	I615	H12		
I062	D2	I255	C8	I369	C12	I616	G12		
I063	D2	I256	D5	I370	C4	I617	H12		
I064	H3	I257	F4	I371	C4	I618	H12		
I065	F5	I258	E4	I372	D9	I619	H12		
I066	F5	I259	B5	I373	B3	I620	K10		
I067	G5	I260	F7	I400	K1	I621	J10		
I068	G5	I261	F6	I405	M7	I622	J9		
I069	G5	I262	F6	I406	K7	I623	J10		
I070	D4	I263	F6	I407	N6	I625	E11		
I071	D4	I264	E8	I408	N6	I626	J3		
I072	D4	I265	A7	I411	L10	I628	J3		
I073	D4	I266	A8	I412	M1	I630	J4		
I074	F3	I267	F8	I413	K8	I632	I8		
I075	F3	I268	B8	I414	L10	I633	I11		
I076	E3	I269	A5	I501	K11	I635	H11		
I077	J1	I270	A8	I502	M6	I637	I11		
I078	H2	I271	A8	I503	J11	I638	H11		
I079	H2	I272	C8	I505	K7	I639	H11		
I080	J1	I273	D8	I506	I9	I640	G10		
I081	J1	I274	D8	I507	J11	I641	I6		
I082	H6	I275	E9	I508	K7	I642	H10		
I083	H5	I276	E8	I512	J8	I643	G10		
I084	I4	I277	E8	I513	J7	I644	D11		

1. Technical specifications

Specification

PLAYBACK SYSTEM

DVD-Video
Video CD & SVCD
CD (CD-R and CD-RW)
DVD+RW
MP3 *(DVD622 only)*

OPTICAL READOUT SYSTEM

Lasertype	Semiconductor AlGaAs
Numerical Aperture	0.60 (DVD) 0.45 (VCD/CD)
Wavelength	650 nm (DVD) 780 nm (VCD/CD)

DVD DISC FORMAT

Medium	Optical Disc	
Diameter	12cm (8cm)	
Playing time	One layer	2.15 h*
(12cm)	Dual layer	4 h*
	Two side Single layer	4.30 h*
	Two side Dual layer	8 h*

VIDEO FORMAT

DA Converter	10 bits
Signal handling	Components
Digital Compression	MPEG2 for DVD, MPEG1 for VCD

TV STANDARD	**(PAL/50Hz)**	**(NTSC/60Hz)**
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

DVD

Horiz. Resolution	720 pixels	720 pixels
Vertical Resolution	576 lines	480 lines

VCD

Horiz. Resolution	352 pixels	352 pixels
Vertical Resolution	288 lines	240 lines

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm
RGB (SCART) output	0.7 Vpp into 75 ohm
Black Level Shift	On/Off
Video Shift	Left/Right

AUDIO FORMAT

Digital	MPEG	Compressed Digital
	DTS/Dolby Digital	16, 20, 24 bits
	PCM	fs, 44.1, 48, 96 kHz

Analog Sound Stereo
Dolby Pro Logic downmix from Dolby Digital multi-channel sound
3D Sound (TruSurround) for virtual 5.1 channel sound on 2 speakers

AUDIO PERFORMANCE

DA Converter	24 bits	
DVD	fs 96 kHz	4 Hz - 44 kHz
	fs 48 kHz	4 Hz - 22 kHz
Video CD	fs 44.1 kHz	4 Hz - 20 kHz
CD	fs 44.1 kHz	4 Hz - 20 kHz
Signal-Noise (1kHz)		100 dB
Dynamic Range (1kHz)		97 dB
Crosstalk (1kHz)		110 dB
Distortion and Noise (1kHz)		88 dB
MPEG MP3		MPEG Audio L3

CONNECTIONS

SCART	Euroconnector
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Digital Output	1 coaxial IEC958 for CDDA / LPCM IEC1937 for MPEG1/2, Dolby Digital and DTS

CABINET

Dimensions (w x h x d)	435 x 81 x 295 mm
Weight	Approx. 3.5 Kg

GENERAL FUNCTIONALITY

Stop / Play / Pause
Fast Forward / Backward
Time Search
Step Forward / Backward
Slow Motion
Title / Chapter / Track Select
Skip Next / Previous
Repeat (Chapter / Title / All) or (Track / All)
A-B Repeat
Shuffle
Scan
New enhanced user graphical interface
Perfect Still with digital multi-tap filter
Zoom (xl.33, x2. x4) with picture enhancement
Smart Picture for convenient personal colour setting *(DVD622 only)*
PAL/NTSC Conversion *(DVD622 only)*
Screen Saver (Dim 75% after 15 min.)
3D Sound (TruSurround)
Virtual Jog Shuttle
Audio and video bit rate indicator

DVD FUNCTIONALITY

Multi-angle Selection
Audio Selection (1 out of max. 8 languages)
Subtitles Selection (1 out of max. 32 languages)
Aspect Ratio conversion (16:9, 4:3 Letterbox, 4:3 Pan Scan)
Parental Control and Disk Lock
Disc Menu support (Title Menu and Root Menu)
Resume (5 discs) after stop / standby
Programming Titles/chapters with Favourite Selection

VIDEO CD FUNCTIONALITY

Playback Control for VCD 2.0 discs
Disc Lock
Resume (5 discs) after stop / standby
Programming Tracks with Favourite Selection

AUDIO CD FUNCTIONALITY

Time Display (Total / Track / Remaining Track Time)
Full audio functionality with remote control
Programming with Favourite Track Selection

MP3 FUNCTIONALITY *(DVD622 only)*

Time Display (Track)
Album and Track Selection
Repeat (Disc / Album / Track)

* *typical playing time for movie with 2 spoken languages and 3 subtitle languages.*

Specifications subject to change without prior notice

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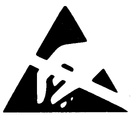
2. Warnings and Laser safety instructions

GB **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD



NL **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

F **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise a leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller a ce que les composants ainsi que les outils que l'on utilise soient également a ce potentiel.

D **WARNUNG**

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, das Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

I **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecifieerde worden toegepast.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten.
Der Originalzustand des Gerats darf nicht verandert werden.
Fur Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago idetici a quelli specificati.

F

Les normes de sécurité exigent que l'appareil soit remis a l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom,
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.
Ref.UL Standard NO.1492.

NOTE ON SAFETY:

Symbol ⚠ : Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol ⚠
Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne."

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120799

LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

LASER DEVICE UNIT

Type:	SemiconductorlaserGaAIAs
Wave length:	650 nm (DVD) 780 nm (VCD/CD)
Output Power:	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence:	60 degree

CLASS 1
LASER PRODUCT

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURE OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

AVOID DIRECT EXPOSURE TO BEAM

WARNING

The use of optical instruments with this product will increase eye hazard.
Repair handling should take place as much as possible with a disc loaded inside the player

WARNING LOCATION: INSIDE ON LASER COVERSHIELD

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

Warning for powersupply on position 1005

The primary side of the powersupply including the heatsink carries live mains voltage when the player is connected to the mains even when the player is swiched off !
This primary area is not shielded so it is possible to touch copper tracks and/or components when servicing the player. Service personnel have to take precautions to prevent touching this area or components in this area .
The primary side of the powersupply has been indicated with a lightning stroke and a stripe-marked printed on the printed wiring board

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060700

2.1 Notes

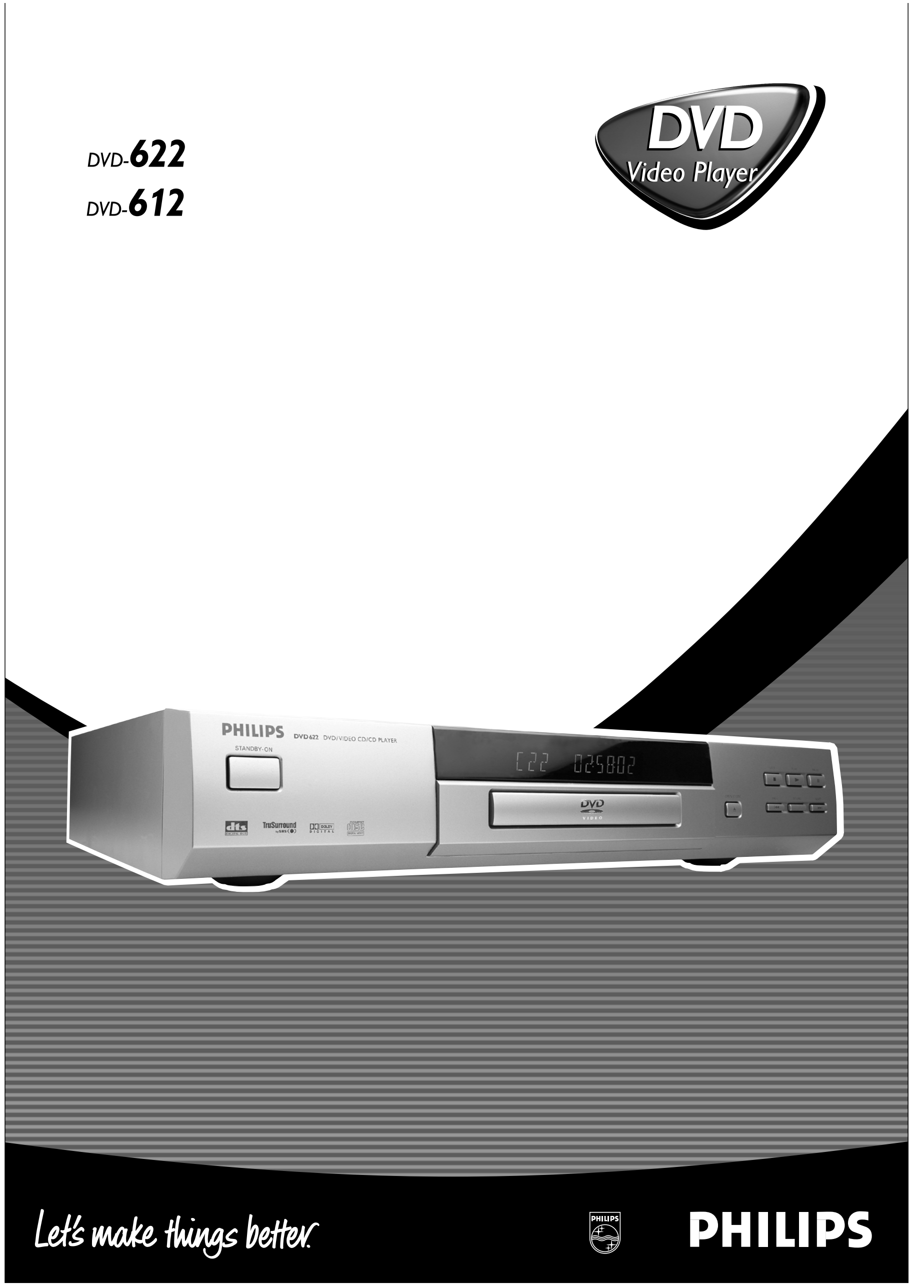
2.1.1 DVD-Module

For repair of the DVD-module ASD1, the service manual 3122 785 10840 has to be used.

2.1.2 Compair

For assistance with the repair process of the monoboard an electronic Fault finding guidance has been developed , this program is called COMPAIR.
This COMPAIR program is available on CDROM.
The Version of the CDROM for repair of the monoboard is V1.3 and can be ordered with codenumber : 4822 727 21637.
This is an update CDROM , so when the COMPAIR CDROM is used for the first time , one has to install the COMPAIR ENGINE CDROM V1.2 first.
The V1.2 CDROM can be ordered with codenumber 4822 727 634 and has to registered after installation , the procedure for registration is explained in the help file of the program and in the booklet from the CDROM.
The cable to connect the monoboard with a PC can be ordered with codenumber 3122 785 90017.
All the hardware and software requirements of the systems necessary for working with COMPAIR is described on the CDROM.

3. Directions for use



Important Note

DK

Advarsel:

Laserrudstråling ved åbning når sikkerhesafbrydere er ude af funktion. Undgå u tsættelse for stråling.

Bemærk:

Netafbryderen POWER er sekundært indkoblet og afbryder ikke strømmen fra nette. Den indbyggede netdel er derfor tilsluttet til lysnettet så længe netstikket sidder i stikkontakten.

N

Observer:

Nettbryteren POWER er sekundert innkoplet. Den innebygdenetdelen er derfor ikke frakoplet nettet så lenge apparatet er tilsluttet nettkontakten.

S

Klass 1 laserapparat

Varning!

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kann användaren utsättas för laserstrålning, som översjruder gränsen för läserklass 1.

Observera!

Strömbrytaren POWER är sekundärt kopplad och inte bryter strömmen fråan nätet Den inbyggda nätdelen är därför ansluten till elnätet så länge stickproppen sitter i v ägguttaget.

SF

Luokan 1 laserlaite + Klass 1 laserapparat

Varoitus!

Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle lasersäleilille.

Huom.

Toiminnanvalitsin POWER on kytketty toisiopuolelle, eikä se kytke laitetta irti sähköverkosta. Sisäänrakennettu verkko-osa on kytkettynä sähköverkkoon aina silloin, kun pistoke on pistorasiassa.

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Important Note for Users in the UK

Mains plug

This apparatus is fitted with an approved 13 Amp plug. To change a fuse in this type of plug proceed as follows:

1 Remove fuse cover and fuse.
2 Fix new fuse which should be a BS1362 5 Amp, A.S.T.A. or BSI approved type.
3 Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.
If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

Note: The severed plug must be disposed of to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L).

As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

- Connect the blue wire to the terminal marked N or coloured black.
- Connect the brown wire to the terminal marked L or coloured red.
- Do not connect either wire to the earth terminal in the plug, marked E (or e) or coloured green (or green and yellow).

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

Copyright in the U.K.
Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

General Information

The region code for this set is 2.

Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes and discs can have an optional region code. If you load a disc of a different region code to your player, you will see the region code notice on the screen. The disc will not playback, and should be unloaded.

NOTE:
PICTURES SHOWN MAYBE DIFFERENT BETWEEN COUNTRIES.

NEVER MAKE OR CHANGE CONNECTIONS WITH THE POWER SWITCHED ON.

CAUTION
(WARNING LOCATION: ON THE BACKPLATE OF SET)

Manufactured under license from Digital Theater Systems, Inc. US Pat. No. 5,451,942 and other world-wide patents issued and pending. "DTS" and "DTS DIGITAL SURROUND" are trademarks of Digital Theater Systems, Inc. © 1996 Digital Theater Systems, Inc. All rights reserved.

The DVD-VIDEO player is in conformity with the EMC directive and low-voltage directive.

TruSurround and the SRS symbol are trademarks of SRS Labs., Inc. TruSurround technology is manufactured under license from SRS Labs., Inc.

For Customer Use:

Read carefully the information located at the bottom of your DVD-VIDEO player and enter below the Serial No. Retain this information for future reference.

Model No. DVD-VIDEO
Serial No. ___________________________

Laser safety

This unit employs a laser. Due to possible eye injury, only a qualified service person should remove the cover or attempt to service this device.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER	
Type	Semiconductor laser GaAlAs
Wave length	650 nm (DVD) 780 nm (VCD/CD)
Output Power	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence	60 degree

CAUTION
VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL
SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING
SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO!
AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT
SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
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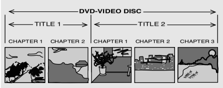
Introduction

Philips DVD-Video Introduction

Your Philips DVD-Video player will playback digital video discs conforming to the universal DVD-Video standard. With it, you will be able to enjoy full-length movies with true cinema picture quality, as well as stereo or multi-channel sound (depending on the disc and your playback setup). The unique features of DVD-Video, such as selection of sound track, subtitle languages and different camera angles (disc dependent), are all supported.
In addition to DVD-Video discs, you will be able to playback all Video CDs, SVCDs and Audio CDs (including finalised CD Recordable and CD Rewritable).

DVD-Video

You will recognise DVD-Video discs by the logo shown.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more Titles.



Video CD

You will recognise Video CDs by the logo shown.

Super VCD (SVCD)

SVCD discs based on the Super VCD IO Standard refering to Standard of Electronics Industry of the People's Republic of China.

Audio CD

Audio CDs contain music tracks only.
You will recognise Audio CDs by their logo shown.

MP3 (MPEG Audio Layer-3) *(DVD622 only)*

This player supports MP3 which contains compressed music tracks.

Note:
– Only the first session of multisession discs is supported

Unpacking

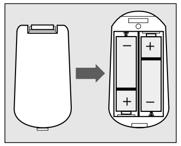
First check and identify the contents of your DVD-Video player package.
You should have the following items.
- DVD-Video player
- Remote Control with batteries
- Audio cable
- SCART cable
- Instructions for use

If any item is damaged or missing, contact your retailer or Philips.
Keep the packaging materials for future transportation.

Remote Control Battery Installation

- Insert batteries as indicated inside the battery compartment.

Caution: Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.)

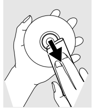


Safety Information

- Do not expose the system to excessive moisture, rain, sand or heat sources.
- Place the player on a firm, flat surface.
- Keep the player away from domestic heating equipment and direct sunlight.
- In a cabinet, allow about 2.5 cm (1 inch) of free space all around the player for adequate ventilation.
- If the DVD-Video player cannot read CDs/DVDs correctly, use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired. Other cleaning methods may destroy the lens. Always keep the tray closed to avoid dust on the lens.
- The lens may cloud over when the DVD-Video player is suddenly moved from cold to warm surroundings. Playing a CD/DVD is not possible then. Leave the power on for about one hour with no disc in the unit until normal playback is possible.

Cleaning Discs

- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the centre out, in a straight line.
- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.



Functional Overview

Front and Rear Panels

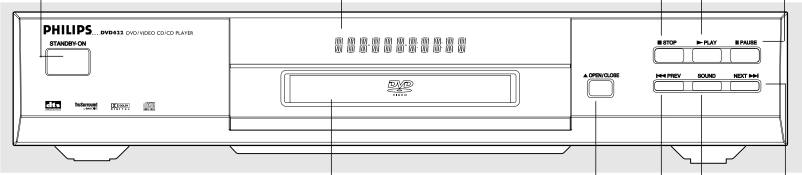
STANDBY-ON
– switches the player to Standby mode or ON

DISPLAY
– shows the current status of the player

II PAUSE
– to interrupt playback

► PLAY
– to start playback

■ STOP
– to stop playback



▲ OPEN/CLOSE
– opens/closes the disc tray

Disc Tray

I◄◄ PREV
– go to previous chapter or track

SOUND
– selects Stereo, Dolby Surround or 3D Sound (TruSurround)

►►I NEXT
– go to next chapter or track

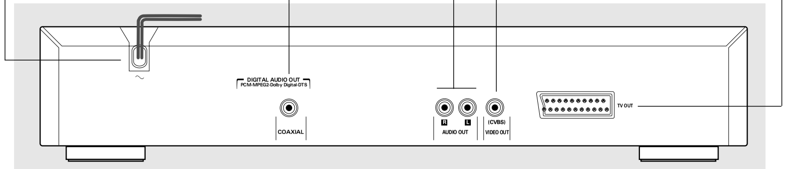
MAINS (AC Power)
– connect to power source

COAXIAL (Digital audio out jack)
– connect to digital (coaxial) equipment

TV OUT (TV)
– connect to TV with SCART

VIDEO OUT (CVBS)
– connect to TV with CVBS video inputs

AUDIO OUT (Left/Right)
– connect to amplifier, receiver or stereo system



Caution: Do not touch the inner pins of the jacks on the rear panel connectors. Electrostatic discharge may cause permanent damage to the unit.

Remote Control

RETURN / RESUME
– go back to previous menu / to continue playback after play was stop

DISC MENU
– access menu of a DVD disc

◀ ▶ ▲ ▼
– (left/right/up/down) to select an item in the menu

OK
– acknowledge menu selection

|◀◀
– search backward* / go to a previous chapter or track

STOP (■)
– to stop playback

PLAY (▶)
– to start playback

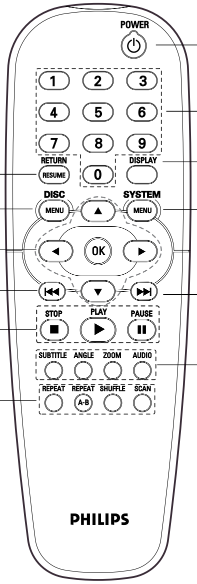
PAUSE (II)
– pause playback temporarily / frame-by-frame playback

REPEAT
– repeat chapter, track, title, disc

REPEAT (A-B)
– repeat a specific segment

SHUFFLE
– playback tracks in random order

SCAN
– playback of the first 10 seconds of each track/chapter within a disc



POWER ⏻
– switches DVD ON or to standby/ on mode

0-9 numerical key pad
– to select numbered items in a menu

DISPLAY
– displays bit rate indicator during playback

SYSTEM MENU
– access or remove player's system menu

▶▶|
– search forward* / next chapter or track

SUBTITLE
– subtitle language selector

ANGLE
– select DVD camera angle

ZOOM
– enlarge video image

AUDIO
– audio language selector

* *Press key for about 2 seconds*

Preparation

General Notes

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the player. Use only one of the connections described below.
- Please refer to the manuals of your TV, VCR, Stereo System or other devices as necessary to make the best connections.
- For better sound reproduction, connect the player's audio out jacks to the audio in jacks of your amplifier, receiver, stereo or A/V equipment. See 'Connecting to optional equipment'.

Caution:
– Do not connect the player's audio out jack to the phono in jack of your audio system.
– Do not connect your DVD-player via your VCR. The DVD image could be distorted by the copy protection system.

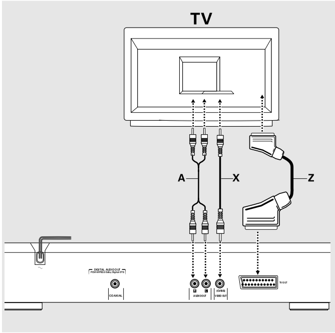
Connecting to a TV

1 Connect the SCART to the corresponding connector on the TV using the SCART cable supplied ***(Z)***.

If your TV is not equipped with a SCART you can select one of the following alterative connections:

Video CVBS connection

1 Connect the Video out (CVBS) jack to the video in jack on the TV using an optional video cable ***(X)***.
2 Connect the Left and Right audio out jacks of the DVD player to the audio left/right in jacks on the TV ***(A)***.



Connecting to Optional Equipment

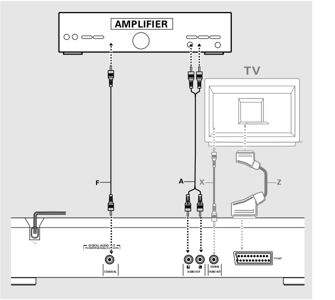
Connecting to an amplifier equipped with two channel analog stereo or Dolby Surround

1 Connect the audio Left and Right out jacks of the DVD player to the audio left and right in jack on your amplifier, receiver or stereo system, using an audio cable ***(A)***.

Connecting to an amplifier equipped with two channel digital stereo (PCM) or to an A/V receiver equipped with a multi-channel decoder (Dolby Digital™, MPEG 2 and DTS)

1 Connect the player's digital audio out jack (coaxial ***F***) to the corresponding in jack on your amplifier. Use an optional digital (coaxial ***F***) audio cable.
2 You will need to activate the player's digital output (see 'Personal Preferences').

Digital Multi-channel sound
Digital multi-channel connection provides the best sound quality. For this you need a multi-channel A/V receiver that supports one or more of the audio formats supported by your DVD player (MPEG 2, Dolby Digital™ and DTS). Check the receiver manual and the logos on the front of the receiver.



Note:

– If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all.

– Six Channel Digital Surround Sound via digital connection can only be obtained if your receiver is equipped with a Digital Multi-channel decoder.

– To see the selected audio format of the current DVD in the Status Window, press SYSTEM MENU or Audio.

NTSC/PAL Settings

You can switch the NTSC/PAL setting of the DVD player to match the video signal of your TV. This setting only affects the television's on-screen display that shows the stop and setup modes. You may select either NTSC or PAL. To change the DVD player setting to PAL or NTSC, follow the steps below.

1. Unplug the DVD player from the mains.
2. Press and hold ■ and ▶▶I, on the front of the DVD player. While holding ■ and ▶▶I, plug in the mains.
3. After PAL or NTSC appears on the display panel of the DVD player, release ■ and ▶▶I, at the same time. The PAL or NTSC that appears on the display panel indicates the current setting.
4. To change the setting, press ▶▶I, within three seconds. The new setting (PAL or NTSC) will appear on the display panel.

NTSC/PAL Conversion *(DVD622 only)*

This player is equipt. with NTSC/PAL conversion feature to convert the video output of the disc to match with your TV system. The conversion supported are as per below.

Disc		Output format		
Type	Format	Selected mode		
DVD	NTSC	NTSC	PAL	NTSC
	PAL	Not Supported	PAL	PAL
VCD	NTSC	NTSC	PAL	NTSC
	PAL	NTSC	PAL	PAL

1. In the Preference Menu, select **TV System**.
2. Press ▲ or ▼ to select PAL, NTSC or AUTO.

Notes:

– AUTO mode can only be selected when using a multi-system TV.

– This is applicable for CVBS output on cinch and SCART only

General Explanation

About this manual

This manual gives the basic instructions for operating the DVD player. Some DVDs require specific operation or allow only limited operation during playback which may not respond to all operating commands. When this occurs, the symbol ╳ appears on the TV screen, indicating that the operation is not permitted by the player or the disc.

Remote control operation

- Unless stated, all operations can be carried out with the remote control. Always point the remote control directly at the player, making sure there are no obstructions in the path of the infrared beam.
  Corresponding keys on the front panel of the player can also be used.

Menu bar operation

- A number of operations can be carried out via the menu bar on the screen. The menu bar can be accessed by pressing the cursor keys on the remote control.
- Pressing SYSTEM MENU while the menu bar is displayed will clear the menu bar from the screen.
- The selected item will be highlighted and the appropriate cursor keys to operate will be displayed below the icon.
- < or > indicates that more items are available at the left/right of the menu bar. Press ◀ or ▶ to select these items.

Initial Setup (Virgin Mode)

General

In 'Initial Setup' you may have to set your preferences for some of the player's features. *(not applicable for all models)*

Operation

After switching on the player for the very first time, the 'Initial Setup Screen' will appear.
The menu for the first item to be set is displayed and the first option is highlighted.

- Use the ▼ ▲ keys to go through the options in the menu. The icon of the selected option will be highlighted.
- Use OK to confirm your selection and to go to the next menu.

Note:

– Preferences have to be set in the order of which the item menus will appear on the screen.

– The 'Initial Setup' screen will only disappear after the settings for the last item have been confirmed.

– If any keys other than ▼ ▲ or OK are pressed, ╳ will appear on the screen.

– If the player is switched off while setting personal preferences, all preferences have to be set again after switching the player on again.

The following items may have to be set in Initial Setup:

Menu language

You can choose from different languages. The On Screen Menus will be displayed in the language available on the player.

Audio language

You can choose from different languages. If available on the disc, the player will play the audio in the selected language. If the selected language is not available, speech will revert to the first spoken language on the disc.

Subtitle language

You can choose from different subtitle languages. If available on the disc, subtitles will be in the language choosen. If the selected language is not available, subtitles will revert to the first subtitle language on the disc.

TV Shape

If you have a wide screen (16:9) TV, select 16:9.
If you have a regular (4:3) TV, select 4:3.
If you have a 4:3 TV, you can also select between: Letterbox for a 'wide-screen' picture with black bars top and bottom, or Pan Scan, for a full-height picture with the sides trimmed. If a disc supports the format, the picture will be shown accordingly.

Country

Select your country. This is used as input for the 'Parental Control' feature (see 'Access Control').

Note:

– All these items may have to be set during 'Initial Setup'. After that, they can always be changed in the Personal Preferences Menu.

Menu Bar/Status Window

As there are multiple menu-bars, the items on the menu-bar are arranged according to usage, availability of direct access keys. Pressing the OSD keys once will toggle through menu-bar-1, menu-bar-2, menu-bar-3 and OFF.

Menu-bar-1
- Personal Preferences
- Subtitle Language
- Audio Language
- Colour
- Sound

Menu-bar-2
- Step
- Slow motion
- Fast motion
- Angle
- Zoom

Menu-bar-3
- Title
- Chapter
- Time Search
- Favourite Track Selection (FTS)

Temporary Feedback Field Icons

scan	Scan
repeat	Repeat All
title	Repeat Title
track	Repeat Track
chapter	Repeat Chapter
shuffle	Shuffle
shuffle	Shuffle Repeat
A-	Repeat A to end
A-B	Repeat A-B
▷	Angle
locked	Child Lock On
safe	Child Safe
resume	Resume
✕	Action prohibited

Personal Preferences

You can set your own personal preferences on the player.

General operation:

- Press SYSTEM MENU on the remote control.
- Select 🔧 in the menu bar.
  ➜ The Personal Preferences menu appears.
- Use the ◀ ▶ ▲ ▼ keys to toggle through the menus, submenus and submenu options.
  ➜ When a menu item is selected, the cursor keys (on the remote control) to operate the item are displayed next to the item.
- Press OK to confirm and return to the main menu.
  The following items can be adapted:

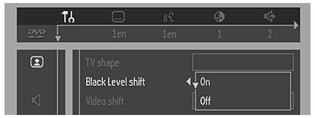
Picture

– TV Shape

See 'Initial Setup'

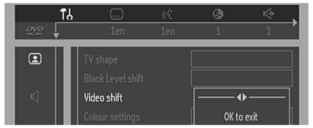
– Black level shift (NTSC only)

Select ON for adapting the colour dynamics to obtain richer contrasts.

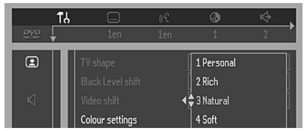

DVD
1en
1en
1
2
TV shape
Black Level shift
Video shift
On
Off

– Video shift

The factory centres the video on your screen. Use this setting to personalize the position of the picture on your TV by scrolling it to the left or right.


DVD
1en
1en
1
2
TV shape
Black Level shift
Video shift
Colour settings
OK to exit

– Colour settings *(DVD622 only)*
You can select one of five predefined sets of colour settings and one set (Personal) which you can define yourself.

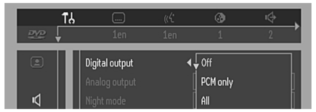

DVD
1en
1en
1
2
TV shape
Black Level shift
Video shift
Colour settings
1 Personal
2 Rich
3 Natural
4 Soft

– Personal colour *(DVD622 only)*
Allows you to fine-tune the selected colour settings saturation, brightness and contrast.

Sound

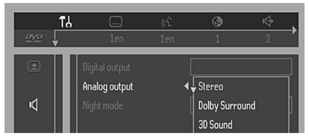
– Digital output

Factory setting: ALL. This means coaxial output is on. If you are not connecting equipment with a digital input, change the setting to OFF.
If your equipment doesn't include a digital multi-channel decoder, set the digital output to PCM (Pulse Code Modulation).


DVD
1en
1en
1
2
Digital output
Analog output
Night mode
Off
PCM only
All

– Analog output

Select Stereo, Dolby Surround or 3D sound (TruSurround) to match your system's playback capability.


DVD
1en
1en
1
2
Digital output
Analog output
Night mode
Stereo
Dolby Surround
3D Sound

– Night Mode

Optimizes the dynamics of the sound for low volume playback.

– Karaoke vocal

Put this setting to ON only when a multi-channel karaoke DVD is being played. The karaoke channels on the disc will then be mixed into a normal stereo sound.

Language

Select the required Menu, Audio and Subtitle language. See 'Initial Setup'.
Audio language and Subtitle language can also be adapted via the Menu bar on the screen.

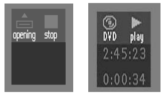
Features

– Access Control

Access Control contains the following features:
Child Lock - When Child Lock is set to ON, a 4-digit code needs to be entered in order to playback discs.
Parental control - Allows the conditional presentation of DVDs containing Parental Control information (see 'Access Control').

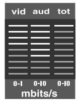
– Status Window

Displays the current status of the player and is displayed with the menu bar. When disc playback is stopped, it is displayed with the 'Temporary Feedback Field' in the default screen. See 'On-Screen Display' information;
Factory setting is ON. Select OFF to suppress display of the Status Window.


opening
stop
DVD
play
2:45:23
0:00:34

– Bit Rate Indicator

When activated, the bit rate for video, audio as well as total bit rate is displayed. This is only applicable during playback of DVD and SVCD discs.


vid
aud
tot
0-1
0-10
0-10
mbits/s

– Help text

When set to ON, help text describes the icons selected.
Select OFF if you no longer require the help text.

Operation

Loading Discs

1 Press OPEN/CLOSE on the front of the player to open disc tray.
2 Load your chosen disc in the tray, label side up.
3 Press OPEN/CLOSE again, to close the tray.
➜ READ appears in the status window and on the player display, and playback starts automatically.

Note:
– If 'Child Lock' is set to ON and the disc inserted is not authorised, the 4-digit code must be entered and/or the disc must be authorised (see 'Access Control').

Playing a DVD-video and Video CD disc

Playing a disc

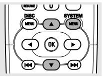
- After inserting the disc and closing the tray, playback starts automatically and the status window of the player display shows the type of disc loaded, as well as disc's information and playing time.
- The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key; if not, use the ▲/▼, ◀/▶ keys to highlight your selection, then press OK.
- The currently playing title and chapter number are displayed.
- Playback may stop at the end of the Title, and then may return to the DVD menu. To go on to the next title, press ▶.
- To stop playback, press ■.
➜ The default screen will appear, giving information about the current status.
- You can resume playback from the point at which you stopped playback. Press ▶; when you see the Resume icon I▶ on the screen, press ▶ again.
➜ The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc and press **RESUME** on the remote control or, press ▶ when you see the Resume icon I▶ on the screen, then press ▶ again.

Note:
– DVDs may have a region code. Your player will not play discs that have a region code different from the region code of your player.

General features

Note:
– Unless stated, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen.

Moving to another title/chapter



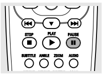
When a disc has more than one title or chapter, you can move to another title/ chapter as follows:
- Press **SYSTEM MENU**, then select T or C in the menu bar.
- Press ▲ or ▼ to select a title/chapter.

Note:
– If the number has more than one digit, press the keys in rapid succession.

Slow Motion

- Select ▷ (SLOW MOTION) in the menu bar.
- Use the ▼ keys to enter the SLOW MOTION menu.
➜ The player will now go into PAUSE mode.
- Use the cursor keys ◀ ▶ to select the required speed: -1, -1/2, -1/4 or -1/8 (backward), or +1/8, +1/4, +1/2 or +1 (forward).
- Select 1 to play the disc at normal speed again.
- If II is pressed, the speed will be set to zero (PAUSE).
- To exit slow motion mode, press ▶ and ▲.

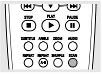
Still Picture and Frame-by-frame playback



- Select ▣ (**STEP**) in the menu bar.
- Use the ▼ key to enter the picture by picture menu.
➜ The player will now go into PAUSE mode.
- Use the cursor keys ◀ ▶ to select the previous or next picture frame.
- To exit **STEP** mode, press ▶ or ▲.

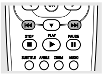
You can also step forward by pressing **II** repeatedly on the remote control.

Scan



Scanning plays the first 10 seconds of each chapter/index on the disc.
- Press **SCAN**.
- To continue playback at your chosen track, press **SCAN** again or press ▶.

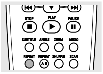
Search



- Select ▶ (FAST MOTION) in the menu bar.
- Use the ▼ keys to enter the FAST MOTION menu.
- Use the ◀ ▶ keys to select the required speed: -32, -8 or -4 (backward), or +4, +8, +32 (forward).
- Select 1 to play the disc at normal speed again.
- To exit FAST MOTION mode, press ▶ or ▲.

To search forward or backward through different speeds, you can also hold down I◀◀ or ▶▶I.

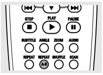
Repeat



DVD-Video Discs - Repeat chapter/ title/disc
- To repeat the currently playing chapter, press REPEAT.
➜ REPEAT CHPT appears on the player display.
- To repeat the title currently playing , press REPEAT a second time
➜ REPEAT TITL appears on the display.
- To repeat the entire disc, press REPEAT a third time
➜ REPEAT appears on the display.
- To exit Repeat mode, press REPEAT a fourth time.

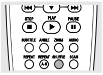
Video CDs - Repeat track/disc
- To repeat the track currently playing , press REPEAT.
➜ REPEAT TRK appears on the player display.
- To repeat the entire disc, press REPEAT a second time.
➜ REPEAT appears on display and screen.
- To exit Repeat mode, press REPEAT a third time.

Repeat A-B



To repeat a sequence in a title:
- Press REPEAT A-B at your chosen starting point;
➜ A- appears briefly on the screen.
- Press REPEAT A-B again at your chosen end point;
➜ REPEAT A-B appears briefly on the display, and the repeat sequence begins.(REPEAT A-B is displayed on the front panel of the player)
- To exit the sequence, press REPEAT A-B.

Shuffle

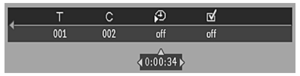


DVD-Video discs
This shuffles the playing order of chapters within a title, if the title has more than one chapter.
- Press SHUFFLE during playback.
➜ **SHUFFLE** appears on the screen for about 2 seconds.
- To return to normal playback, press SHUFFLE again.

Video CDs
- Press SHUFFLE during playback.
➜ **SHUFFLE** appears on the screen for about 2 seconds.
- To return to normal playback, press SHUFFLE again.

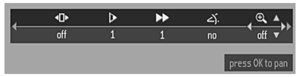
Time search

The Time Search function allows you to start playing at any chosen time on the disc.
- Select ⌚ (TIME SEARCH) in the menu bar.
- Press ▼.
➜ The player will now go into PAUSE mode.
➜ A time edit box appears on the screen, showing the elapsed playing time of the current disc.
- Use the digit keys to enter the required start time. Enter hours, minutes and seconds from left to right in the box.
➜ Each time an item has been entered, the next item will be highlighted.
- Press OK to confirm the start time.
➜ The time edit box will disappear and playback starts from the selected time position on the disc.



Zoom

The Zoom function allows you to enlarge the video image and to pan through the enlarged image.
- Select 🔍 (**ZOOM**).
- Press ▲/▼ to activate the **ZOOM** function and select the required zoom factor: 1.33 or 2 or 4.
➜ The player will go into Pause mode.
➜ The selected zoom factor appears below the Zoom icon in the menu bar and '*Press OK to pan*' appears below the menu bar.
➜ The picture will change accordingly.
- Press OK to confirm the selection.
➜ The panning icons appear on the screen.
- Use the ◀ ▶ ▲ ▼ keys to pan across the screen.
- When OK is pressed only the zoomed picture will be shown on the screen.
- To exit **ZOOM** mode:
  – Press ▶ to resume playback.



FTS-Video

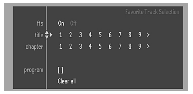
- The FTS-Video function allows you to store your favourite titles and chapters (DVD) and favourite tracks and indexes (VCD) for a particular disc in the player memory.
- FTS programme can contain 20 items (titles, chapters).
- An programmed FTS will be placed on top of the list when playback is activated. When the list is full, a new programme will replace the last programme on the list.
- The programme can be selected and played at any time.

Storing a FTS-Video Programme

- In STOP mode, select **VIDEO FTS** ☑ in the menu bar.
- Press ▼ to open the menu.
  ➜ The **VIDEO FTS** menu appears.
- Press ▶ or ◀ or FTS to select ON or OFF.

Storing titles/tracks

- Press ▼ to select **TITLES**.
- Use ▶ and ◀ to select the required title.
- Press OK if you wish to store the entire title.
  ➜ The title number will be added to the list of selections.



Storing chapters/indexes

- Press ▼ on the selected title number.
  ➜ The title number will be marked and the highlight moves to the first available chapter number for this title.
- Use ▶ and ◀ to select the required chapter number.
- Press OK to confirm the selection.
  ➜ The title/chapter selection will be added to the list of selections.
- Press SYSTEM MENU to exit the **VIDEO FTS** ☑ menu.

Erasing a FTS-Video Programme

- In STOP mode, select **VIDEO FTS** ☑ in the menu bar.
- Use ▼ to select **PROGRAM**.
- Use ▶ and ◀ to select the required selection number.
- Press OK to erase the selection.
- Press SYSTEM MENU to exit.

If you wish to erase all selections:

- In STOP mode, select **VIDEO FTS** ☑ in the menu bar.
- Use ▼ to select **CLEAR ALL**.
- Press OK.
  ➜ All selections will now be erased.
- Press SYSTEM MENU to exit.

Special DVD features

Checking the contents of DVD-Video discs: Menus

DVDs may contain menus to navigate the disc and access special features. To use the menu, press the appropriate numerical key; or use the ▼, ▲, ▶, ◀ keys to highlight your selection, then press OK..

Title/Disc menu

- Press **DISC MENU**.
  ➜ If the current title has a menu, the menu will appear on the screen otherwise, the disc menu will be displayed.
- The menu can list camera angles, spoken language and subtitle options, and chapters for the title.
- To remove the title menu, press **DISC MENU** again.

Camera Angle

If the disc contains sequences recorded from different camera angles, the angle icon appears, showing the number of available angles and the angle being shown currently. You can then change the camera angle if you wish.

- Use the ▲/▼ keys to select the required angle icon.
  ➜ After a while, playback changes to the selected angle. The angle icon remains displayed until multiple angles are no longer available.

Changing the audio language

- Select ((‹ (**AUDIO**) in the menu bar.
- Press ((‹ or ▲/▼ repeatedly to see the different languages.

Subtitles

- Select ▭ (**SUBTITLE**) in the menu bar.
- Press ▭ or ▲/▼ repeatedly to see the different subtitles.

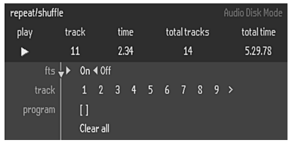
Special VCD & SVCD features

Playback Control (PBC)

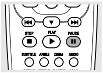
- Load a Video CD with PBC and press ▶.
- Go through the menu with the keys indicated on the TV screen until your chosen passage starts to playback. If a **PBC** menu consists of a list of titles, you can select a title directly.
- Enter your choice with the numerical keys (0-9).
- Press RETURN to go back to the previous menu.
- You may also set to **PBC OFF** under Personal Preferences.

Playing an audio CD

- After loading the disc, playback starts automatically.
- If the TV is on, the Audio CD screen appears.
- The number of tracks and the total playing time will be shown on the screen.
- During playback, the current track number and its elapsed playing time will be shown on the screen and on the player display.
- Playback will stop at the end of the disc.
- To stop playback at any other time, press ■.

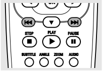


Pause



- Press **II** during playback.
- To return to playback, press ▶.

Search

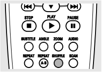


- To search forward or backward through the disc at four times normal speed, hold down ⏮ or ⏭ for about one second during playback.
  ➜ Search begins, and sound is partially muted.
- To step up to eight times the normal speed, press ⏮ or ⏭ again.
  ➜ Search goes to eight times the speed, and the sound is muted.
- To return to four times the normal speed, press ⏮ or ⏭ again.
- If the TV is on, search speed and direction are indicated on the screen each time ⏮ or ⏭ is pressed.
- To end the search, press ▶ to resume playback or ■ to stop.

Moving to another track

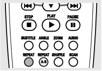
- Press ⏮ or ⏭ briefly during playback to go to the next or to return to the beginning of the current track.
- Press ⏮ twice briefly to step back to the previous track.
- To go directly to any track, enter the track number using the numerical keys (0-9).

Shuffle



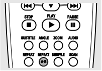
- Press **SHUFFLE** during playback.
  ➜ The order of the tracks is changed.
- To return to normal playback, press **SHUFFLE** again.

Repeat track/disc



- To repeat the track currently playing , press REPEAT.
  ➜ **REPEAT TRK** appears on the display.
- To repeat the entire disc, press REPEAT a second time.
  ➜ **REPEAT** appears on the display.
- To exit Repeat mode, press REPEAT a third time.

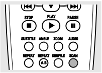
Repeat A-B



To repeat a sequence:

- Press REPEAT A-B at your chosen starting point;
  ➜ **A-** appears on the player display.
- Press REPEAT A-B again at your chosen end point;
  ➜ **A-B** appears on the display, and the sequence begins to playback repeatedly.
- To exit the sequence, press REPEAT A-B again.

Scan

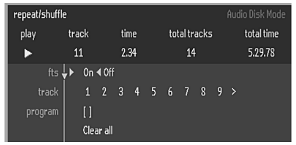


Scanning plays the first 10 seconds of each track on the disc.

- Press SCAN.
- To continue playback at your chosen track, press SCAN again or press ▶.

FTS Programme

- FTS Programme allows you to store your favourite tracks for a particular disc in the player memory.
- Each FTS Programme can contain 20 tracks.



Storing an FTS Programme

1 Load a disc and stop playback.
2 Use ▼ to go to the list of available tracks.
3 Use ▶ or ◀ to select tracks from the list.
To go directly to any track, enter the track number using the numerical keys (0-9).
4 Store each track by pressing OK.
➜ The track numbers will be added to the list.
➜ The number of tracks and the playing time of the programme will be shown on the screen and the player display.

When your FTS Programme is complete, press ▶ to start playback, or ▲ to go back to Stop mode. In either case, the FTS Programme will be automatically memorized.

Switching FTS ON/OFF

1 Use ▲ ▼ to move to select desired tracks.
2 Use ▶ or ◀ to select either ON or OFF.

Erasing a track from an FTS Programme

1 Use ▼ to go to the list of selected tracks.
2 Use ▶ and ◀ to select the track number you wish to erase.
3 Press OK.
➜ The track number will be erased from the list of selected tracks.

Erasing the complete programme

1 Use ▼ to select **CLEAR ALL**, then press OK.
➜ The complete FTS Programme for the disc will be erased.

MP3 Disc Features *(DVD622 only)*

Downloading MP3 files from the Internet or ripping songs from your own legal discs, is a delicate process.

Sound Quality	Bit Rate	Approximate Reduction Ratio	Approximate total MP3-CD time	Comment
AM radio	32 kbps	40 : 1	40 hrs	Sound quality signigicantly affected – not recommended.
FM radio	64 kbps	20 : 1	20 hrs	
Near-CD	**96 kbps**	**15 : 1**	**15 hrs**	**Balanced sound quality – compression rate**
CD-like	**128 kbps**	**10 : 1**	**10 hrs**	
CD*	256 kbps	5 : 1	5 hrs	Compression rate low – suggest to play CDs instead
CD*	320 kbps	3 : 1	3 hrs	

As a result, you may experience an occasional “skip” while listening to your MP3 Disc’s. This is considered to be normal.

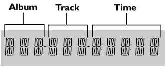
Additional note for MP3 Disc Playback;
- In compliance with the SDMI, digital-out is muted while playing MP3 discs.
- It supports sampling frequencies of 48 kHz, 44.1 kHz (preferred) and 32 kHz.
- Due to the recording nature of DAM discs (these are disc's containing both Digital Audio and MP3 encoded music), it will only play the Digital Audio music.

Note:
– *Only the first session of multisession discs is supported*

Album/Title

This feature allows you to view and select the next or previous MP3 disc Album/Title.

1 Press ▲/▼ to scroll through the previous or next Album.
2 Press ◀/▶ to scroll through the previous or next Track.



➜ will be displayed.

3 You can also select the desired album/track number directly from the numerical key pad on the remote control.

Note:
– ***In STOP mode**: numbers are used for ALBUM selection.*
– ***In PLAY mode**: numbers are used for TRACK selection.*

- Only the following modes are possible for MP3 discs;
  – STOP / PLAY / PAUSE
  – SKIP NEXT / PREVIOUS
  – REPEAT (ALBUM / TRACK / DISC)

MP3 Discs - Album/Track/Disc

- To repeat track, press REPEAT.
➜ **REPEAT TRK** appears on the display.
- To repeat album, press REPEAT a second time.
➜ **REPEAT ALBM** appears on the player display.
- To repeat disc, press REPEAT a third time.
➜ **REPEAT DISC** appears on the player display.

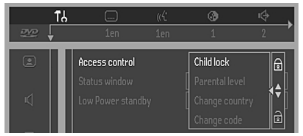
Access Control

Access Control; Child Lock (DVD-Video and Video CD)

Activating/deactivating the child lock

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▲/▼ keys.
2 Enter a 4-digit code of your own choice.
3 Enter the code a second time.
4 Move to "**CHILD LOCK**" using the ▲/▼ keys.
5 Move to **LOCK/UNLOCK** using the ▶ key.
6 Select **LOCK** using the ▲/▼ keys.
7 Press OK or ◀ to confirm, then press ◀ again to exit the menu.
➜ Now unauthorized discs will not be played unless the 4-digit code is entered.
8 Select **UNLOCK** to deactivate the **CHILD LOCK**.

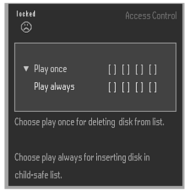
Note: Confirmation of the 4-digit code is necessary when:
– ***The code is entered for the very first time (see above),***
– ***The code is changed (see 'Changing the 4-digit code'),***
– ***The code is cancelled (see 'Changing the 4-digit code').***



Authorizing discs

- Insert the disc. See 'Loading disc'.
➜ The 'child protect' dialog will appear.
You will be asked to enter your secret code for 'Playback Once' or 'Playback Always.' If you select 'Playback Once', the disc can be played as long as it is in the player and the player is ON. If you select 'Playback Always', the disc will become child safe (authorized) and can always be played, even if the Child Lock is set to ON.

Notes:
– The player memory maintains a list of 120 authorized ('Child safe') disc titles. A disc will be placed in the list when 'Playback Always' is selected in the 'child protect' dialog.
– Each time a 'child safe' disc is played, it will be placed on top of the list. When the list is full and a new disc is added, the last disc in the list will be removed from the list.
– Double sided DVDs may have a different ID for each side. In order to make the disc 'child safe', each side has to be authorized.
– Multi-volume VCDs may have a different ID for each volume. In order to make the complete set 'child safe', each volume has to be authorized.



Choose play once for deleting disk from list.

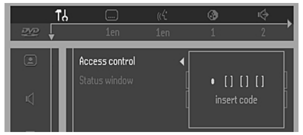
Choose play always for inserting disk in child-safe list.

Deauthorizing discs

- Insert the disc. See 'Loading disc'.
➜ Playback starts automatically.
- Press ■ while ☺ is visible.
➜ The ☹ will appear and the disc is now deauthorized.

Access control; Parental Control (DVD-Video only)

Movies on DVDs may contain scenes not suitable for children. Therefore, disc may contain 'Parental Control' information which applies to the complete disc or to certain scenes on the disc. These scenes are rated from 1 to 8, and alternative, more suitable scenes are available on the disc. Ratings are country dependent. The 'Parental Control' feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes.



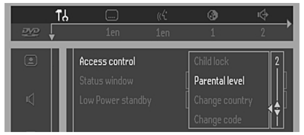
Activating/Deactivating Parental Control

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▲/▼ keys.
2 Enter your 4-digit code. If necessary, enter the code a second time.
3 Move to Parental Control using the ▲/▼ keys.
4 Move to **VALUE ADJUSTMENT** (1-8) using the ▶ key.
5 Then use the ▲/▼ keys or the numerical keys on the remote control to select a rating from 1 to 8 for the disc inserted.

Rating 0 (displayed as '– –'):
Parental Control is not activated. The Disc will be played in full.

Ratings 1 to 8:
The disc contains scenes not suitable for children. If you set a rating for the player, all scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, playback will stop and the 4-digit code has to be entered.

6 Press OK or ◀ to confirm, then press ◀ again to exit the menu.



Country

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▲/▼ keys.
2 Enter the 4-digit code.
3 Move to **CHANGE COUNTRY** using the ▼ key.
4 Press the ▶ key.
5 Select a country using ▲/▼.
6 Press OK or ◀ to confirm, then press ◀ again to exit the menu.

Changing the 4-digit code

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▲/▼ keys.
2 Enter the old code.
3 Move to **CHANGE CODE** using the ▼ key.
4 Press the ▶ key.
5 Enter the new 4-digit code.
6 Enter the code a second time and reconfirm by pressing OK.
7 Press ◀ to exit the menu.

If you forget your 4 digit code

1 Press ■ to exit 'Child Protect' screen.
2 Select **ACCESS CONTROL** in the features menu using the ▲/▼ keys.
3 The 4-digit code can be cancelled by pressing ■ four times in the 'Access Control' dialog.
4 You can then enter a new code (twice!) as described above (Changing the 4 digit code).

Parental Control Disclaimer

This DVD player features the **PARENTAL CONTROL** system which is intended to activate when playing DVD discs furnished with certain software coding. This is according to technical standards adopted by the set maker and disc content industries.
Please note that the **PARENTAL CONTROL** system will not operate a DVD disc which is not furnished with the appropriate software coding. Also note that at the time of release of this DVD player, certain aspects of the technical standards had not been settled between set makers and the disc industries.
On this basis Philips cannot guarantee the functioning of **PARENTAL CONTROL** system and denies any liability associated with unintended watching of disc content.
If in doubt, please make sure the disc plays according to your **PARENTAL CONTROL** settings before you allow children access to the player.

Before Requesting Service

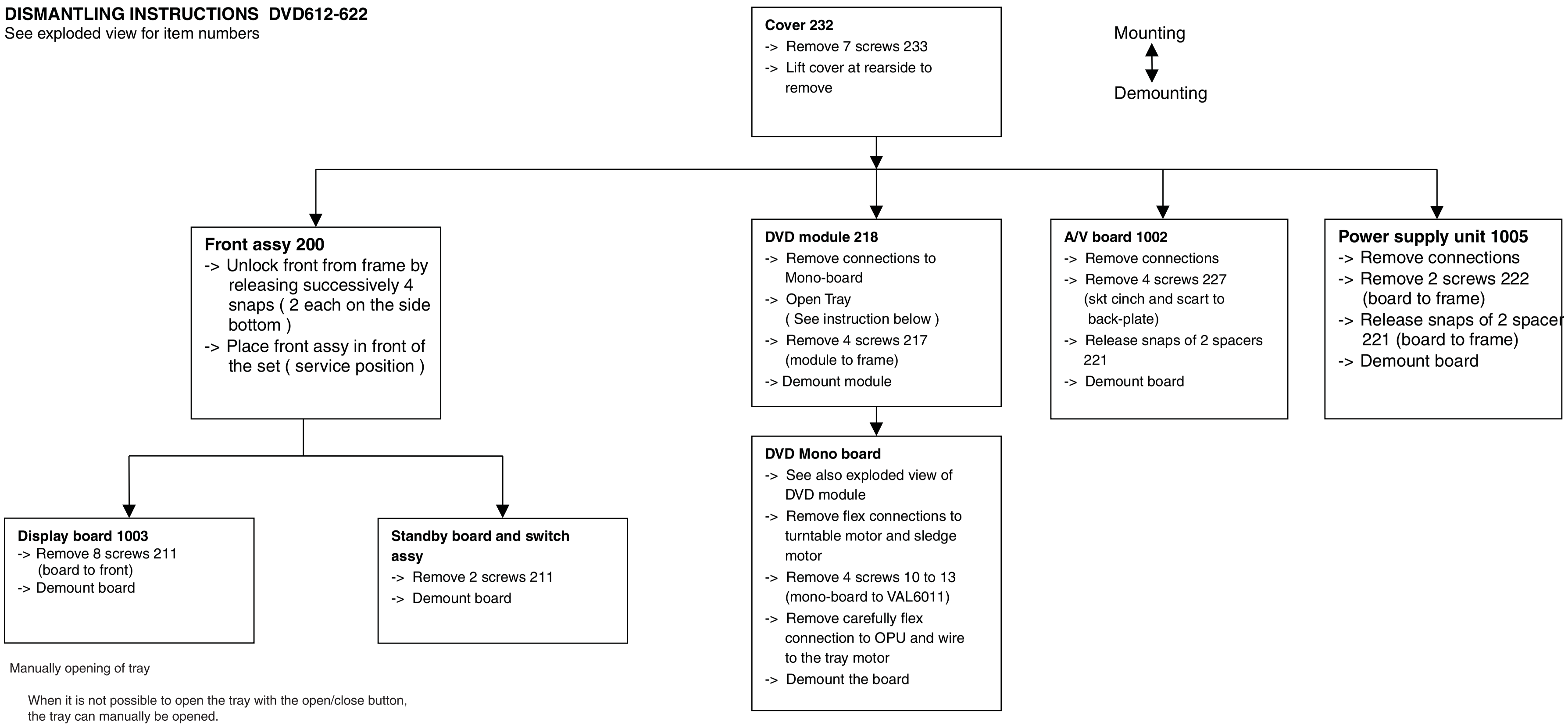
If it appears that the DVD-Video player is faulty, first consult this checklist. It may be that something has been overlooked. Under no circumstances attempt to repair the system yourself; this will invalidate the warranty.

Look for the specific symptom(s). Then perform only the actions listed to remedy the specific symptom(s).

Symptom	Remedy
No power	– Make sure the mains cord (AC Power) is properly connected. – Check if there is power at the AC outlet by plugging in another appliance.
No picture	– Check if the TV is switched on. – Check the video connection.
Distorted picture	– Check the disc for fingerprints and clean the disc with a soft cloth, wiping from the centre to the edge in a straight line. – Sometimes a small amount of picture distortion may appear .This is not a malfunction.
Completely distorted picture or no colour with player menu.	– If the picture is distorted completely or if the picture rolls vertically, make sure the NTSC/PAL setting at the DVD player matches the video signal of your television. – If your TV video signal is NTSC, select the NTSC setting at the DVD player. – If your video signal is PAL, select the PAL setting - see NTSC/PAL SETTINGS.
Distorted or Black/White picture with DVD or Video CD.	– The disc format does not match your TV's video signal (PAL/NTSC) - see NTSC/PAL Conversion.
No sound	– Check audio connections. – If you are using a HiFi amplifier, try another sound source.
Distorted sound from HiFi amplifier.	– Check to make sure that no audio connections are made to the amplifier phono input.
No audio at digital output.	– Check the digital connections. – Check the settings menu to make sure the digital output is set to ALL or PCM. – Check if the audio format of the selected audio language matches your receiver capabilities. – Not applicable for MP3
Disc can't be played.	– Ensure the disc label is facing up. – Clean the disc. – Check if the disc is defective by trying another disc. – Check to see if the disc is defective, badly scratched or warped (not flat)
No return to start-up screen when disc is removed.	– Reset by switching the player off, then on again. – Check to see if the programme requires another disc to be loaded.
The player does not respond to the remote control.	– Aim the remote control directly at the sensor on the front of the player. – Remove any obstacles between the player and the remote control. – Inspect or replace the batteries in the remote control.
Buttons do not work.	– In order to completely reset the player, unplug the AC cord from the AC outlet. (Please ensure that the set is not in Initial Setup mode)
Player does not respond to some operating commands during playback.	– Operations may not be permitted by the disc. Refer to the instructions of the disc.
DVD-Video player cannot read CDs/DVDs	– Use a commonly available cleaning CD/DVD to clean the lens before sending the DVD-Video player for repair.

4. Mechanical instructions

4.1 Dismantling instrutions



DISMANTLING INSTRUCTIONS DVD612-622
See exploded view for item numbers

Mounting
Demounting

Cover 232
-> Remove 7 screws 233
-> Lift cover at rearside to remove

Front assy 200
-> Unlock front from frame by releasing successively 4 snaps (2 each on the side bottom)
-> Place front assy in front of the set (service position)

DVD module 218
-> Remove connections to Mono-board
-> Open Tray (See instruction below)
-> Remove 4 screws 217 (module to frame)
-> Demount module

A/V board 1002
-> Remove connections
-> Remove 4 screws 227 (skt cinch and scart to back-plate)
-> Release snaps of 2 spacers 221
-> Demount board

Power supply unit 1005
-> Remove connections
-> Remove 2 screws 222 (board to frame)
-> Release snaps of 2 spacer 221 (board to frame)
-> Demount board

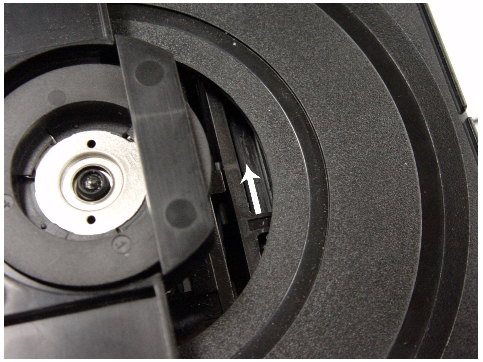
Display board 1003
-> Remove 8 screws 211 (board to front)
-> Demount board

Standby board and switch assy
-> Remove 2 screws 211
-> Demount board

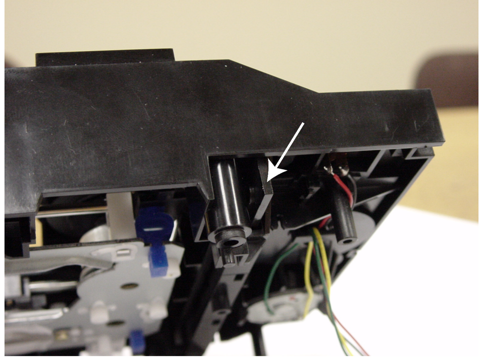
DVD Mono board
-> See also exploded view of DVD module
-> Remove flex connections to turntable motor and sledge motor
-> Remove 4 screws 10 to 13 (mono-board to VAL6011)
-> Remove carefully flex connection to OPU and wire to the tray motor
-> Demount the board

Manually opening of tray

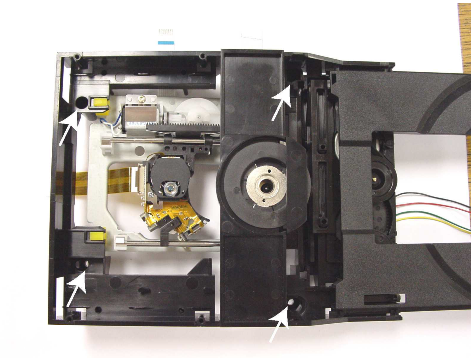
When it is not possible to open the tray with the open/close button, the tray can manually be opened.
When no disc is loaded, unlock the tray by moving the slide from the left to the right and pull tray outwards.



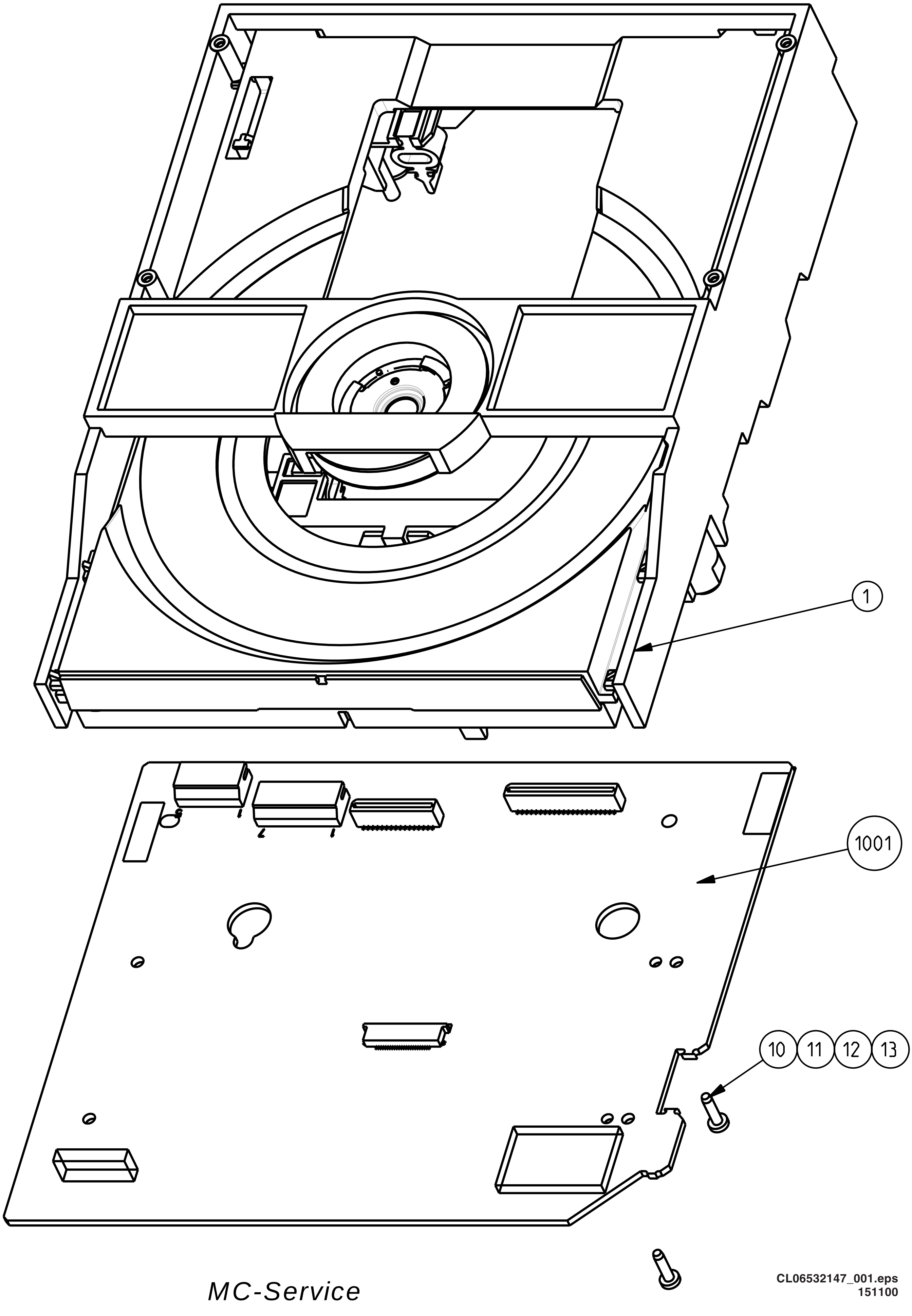
When a disc is loaded, unlock the tray by pushing the slide inwards by way of a screwdriver and pull tray outwards.



Remove 4 screws to remove loader.

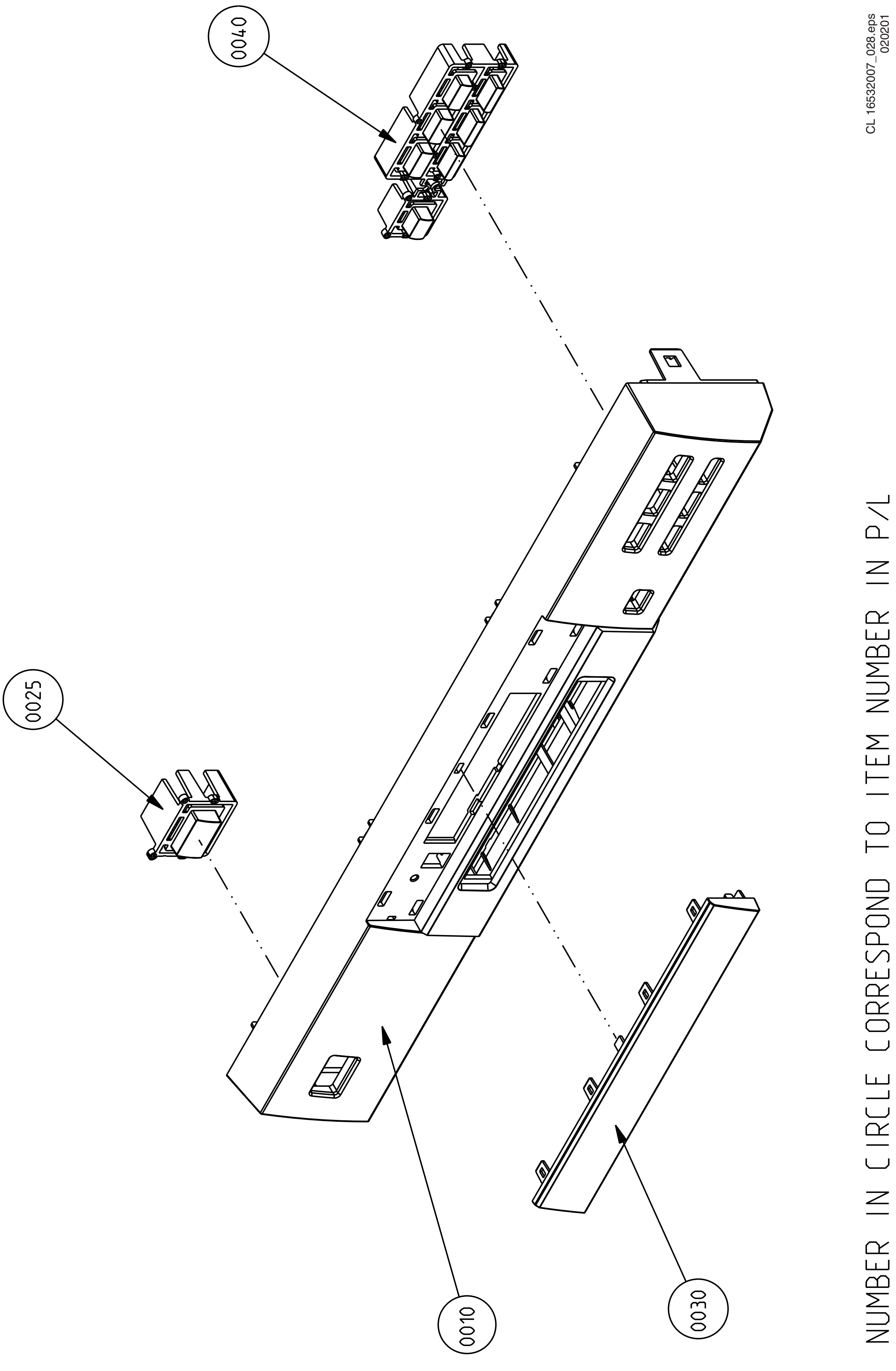


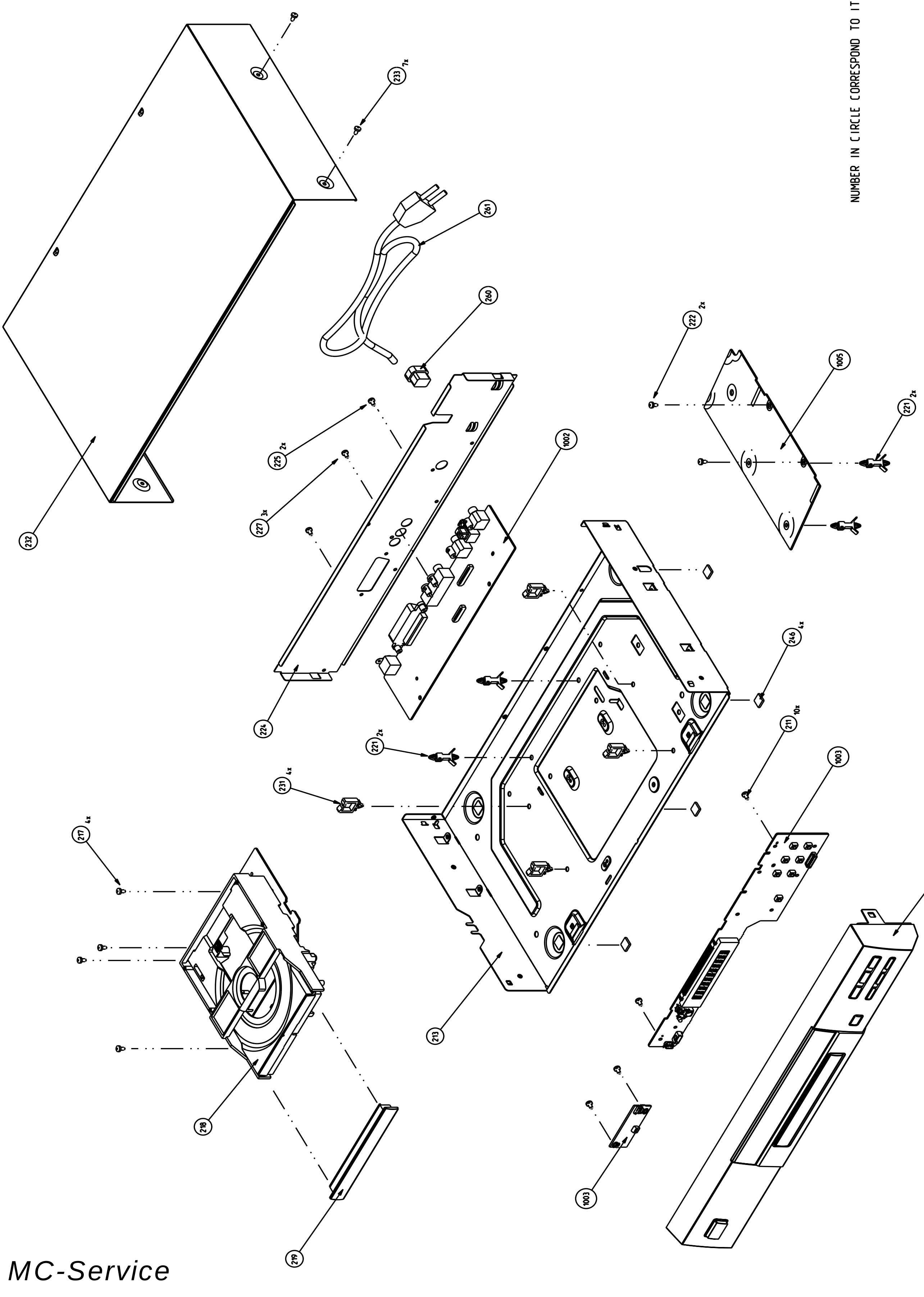
CL 16532007_056.eps
120201


1
1001
10
11
12
13

CL06532147_001.eps
151100

4.2 Exploded views


0040
0025
0010
0030
NUMBER IN CIRCLE CORRESPOND TO ITEM NUMBER IN P/L
CL 16532007_028.eps
020201


232
233 7x
261
260
225 2x
227 3x
1002
222 2x
1005
221 2x
224
246 4x
211 10x
1003
221 2x
231 4x
217 4x
213
200
218
219
1003

NUMBER IN CIRCLE CORRESPOND TO ITEM NUMBER IN P/L

CL 16532007_030.eps
070201

4.3 Service position

See figure 4-1 for the service position

1. Remove the cables from the cable tie housing.

2. Remove 4 screws that mount the DVD module to the bottom frame.

3. Move the DVD module backward slightly and flip the module over, so that the component side of the board faces upwards, and the module is in the service position.

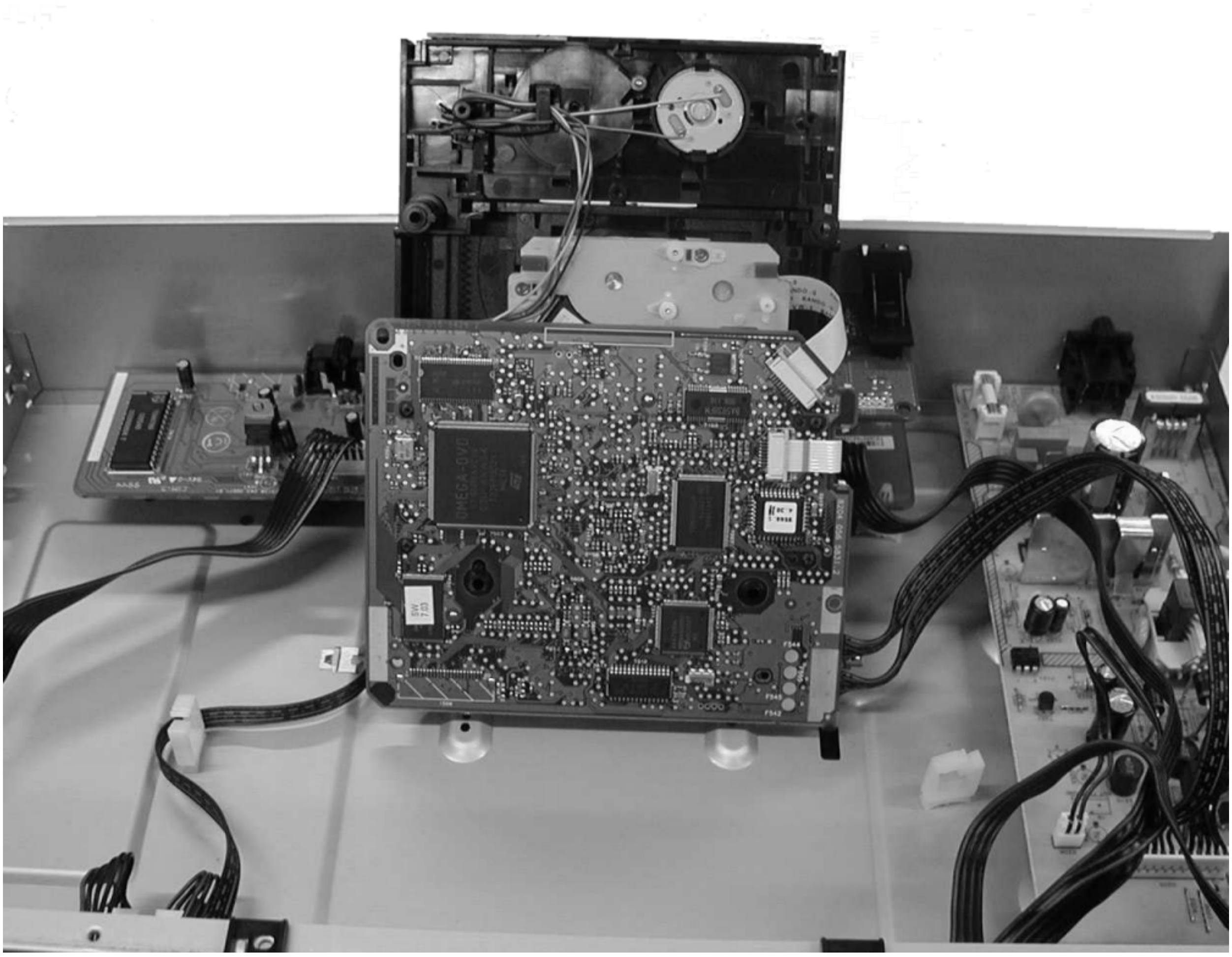


Figure 4-1

5. Diagnostic software descriptions and troubleshooting

5.1 Dealerscript

5.1.1 Purpose of Dealer Script

The dealer script can give a diagnosis on a standalone DVD player; no other equipment is needed to perform a number of hardware tests to check if the DVD player is faulty. The diagnosis is simply a "error" or "pass" message; no indication is given of faulty hardware modules. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

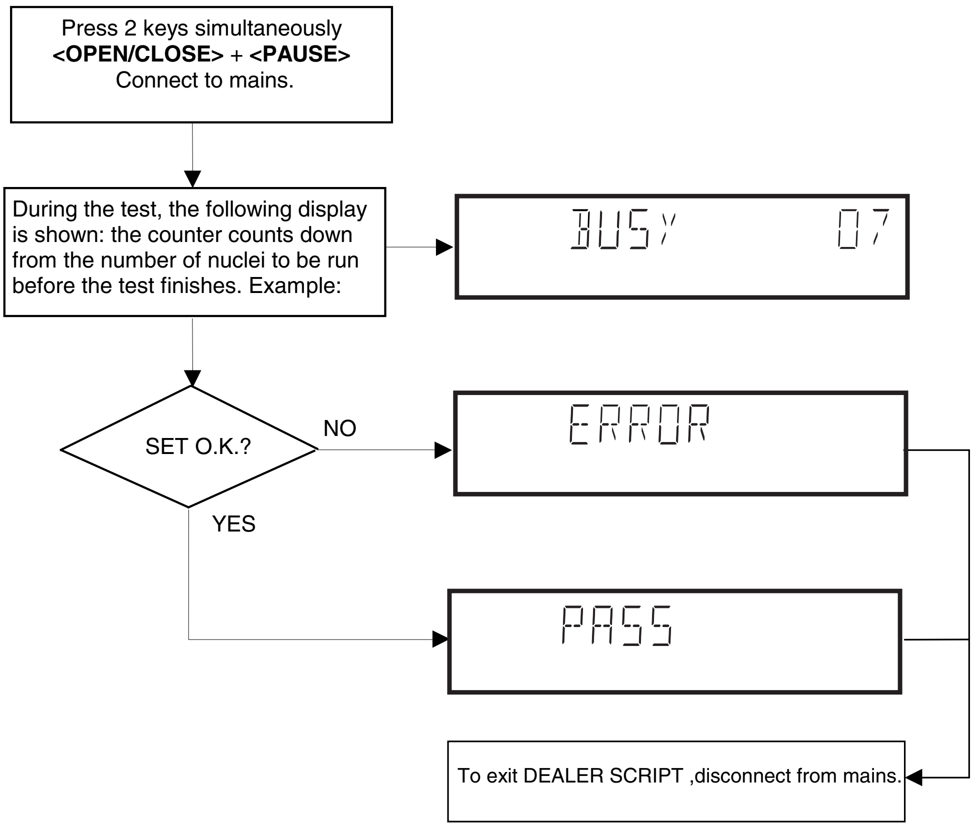
5.1.2 Contents of Dealer Script

The dealer script executes all diagnostic nuclei that do not need any user interaction and are meaningful on a standalone DVD player.
The nuclei called in the dealer script are the following (the number after each nucleus name corresponds with the number being on the local display when the nucleus is executed during the dealer script):

Nucleus		Description
VideoColSetupComm	7	Checks the I2C interface with the RGB video processor on the Audio/Video board (only for DVD players with RGB video processor).
PapChksFl	6	Calculate and verify checksum of FLASH memory.
PapI2cDisp	5	Checks the I2C interface with the slave processor on the display PCB.
PapS2bEcho	4	Checks the I2C interface to the basic engine.
PapI2cNvram	3	Checks the I2C interface with the NVRAM.
PapNvramWrR	2	Pattern test of all locations in the NVRAM
CompSdramWrR	1	Pattern test of all locations in the SDRAM(s).

CL06532096_001.eps
050700

Figure 5-1


Press 2 keys simultaneously
<OPEN/CLOSE> + <PAUSE>
Connect to mains.
During the test, the following display is shown: the counter counts down from the number of nuclei to be run before the test finishes. Example:
BUSY 07
SET O.K.?
NO
YES
ERROR
PASS
To exit DEALER SCRIPT ,disconnect from mains.

CL 96532065_004.eps
120799

Figure 5-2

5.2 PLAYER SCRIPT

5.2.1 Purpose of Player Script

The Player script will give the opportunity to perform a test that will determine which of the DVD player's modules are faulty, to read the error log and error bits and to perform an endurance loop test. To successfully perform the tests, the DVD player must be connected to a tv set to check the output of a number of nuclei. For DVDv2b a multi-channel amplifier, a set of 6 boxes and an external video source are necessary to test. To be able to check results of certain nuclei, the player script expects some interaction of the user (i.e. to approve a test picture or a test sound). Some nuclei (e.g. nuclei that test functionality of the Basic Engine module) require that the DVD player itself is opened, to enable the user to observe moving parts and approve their movement visually. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

5.2.2 Contents of Player Script

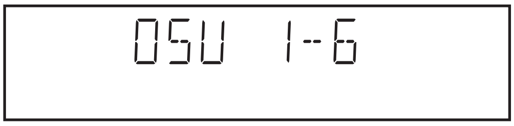
The player script contains all nuclei that are useful on a DVD player that is connected to a tv-set and help to determine which module of the DVD player is faulty, as well as to read out the contents of the error logs.

5.2.3 Structure of Player Script

The player script consists of a set of nuclei testing the three hardware modules in the DVD player: the Display PWB, the Digital PWB and the Basic Engine.
Nuclei run by the player test need some user interaction; in the next paragraph this interaction is described. The player test is done in two phases:

1. Interactive tests: this part of the player test depends strongly on user interaction and input to determine nucleus results and to progress through the full test. Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player.
2. The loop test will loop through the list of nuclei indefinitely, till the NEXT key is pressed. The list of nuclei is as follows:
   - VideoColSetupComm
   - VideoScartSwComm
   - PapChksFlash
   - PapI2cNvram
   - CompSdramWrR
   - PapS2bEcho
   - PapI2cDisp

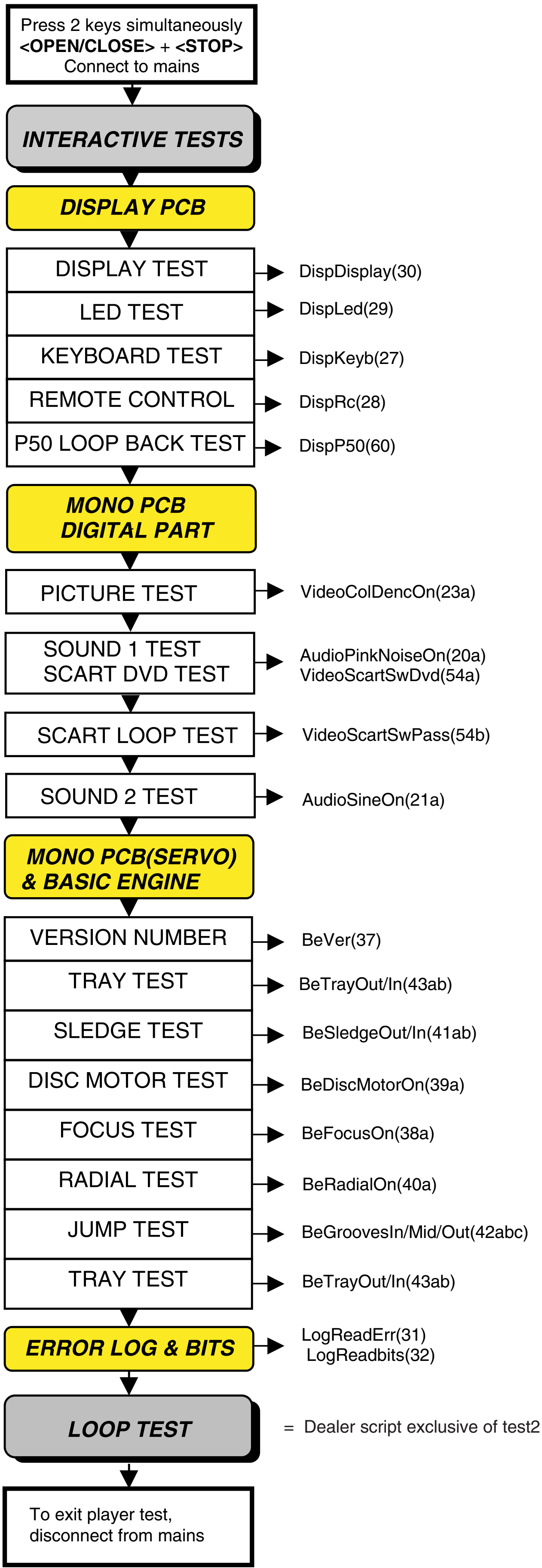
For DSW version 1.6 and above. the DSW version number will be displayed on the local display. Press NEXT to continue to the display test.
The display should look like the following:



CL 16532007_002.eps
010201

Figure 5-3

5.2.4 Survey


Press 2 keys simultaneously
<OPEN/CLOSE> + <STOP>
Connect to mains
INTERACTIVE TESTS
DISPLAY PCB
DISPLAY TEST
DispDisplay(30)
LED TEST
DispLed(29)
KEYBOARD TEST
DispKeyb(27)
REMOTE CONTROL
DispRc(28)
P50 LOOP BACK TEST
DispP50(60)
MONO PCB DIGITAL PART
PICTURE TEST
VideoColDencOn(23a)
SOUND 1 TEST SCART DVD TEST
AudioPinkNoiseOn(20a)
VideoScartSwDvd(54a)
SCART LOOP TEST
VideoScartSwPass(54b)
SOUND 2 TEST
AudioSineOn(21a)
MONO PCB(SERVO) & BASIC ENGINE
VERSION NUMBER
BeVer(37)
TRAY TEST
BeTrayOut/In(43ab)
SLEDGE TEST
BeSledgeOut/In(41ab)
DISC MOTOR TEST
BeDiscMotorOn(39a)
FOCUS TEST
BeFocusOn(38a)
RADIAL TEST
BeRadialOn(40a)
JUMP TEST
BeGroovesIn/Mid/Out(42abc)
TRAY TEST
BeTrayOut/In(43ab)
ERROR LOG & BITS
LogReadErr(31)
LogReadbits(32)
LOOP TEST
= Dealer script exclusive of test2
To exit player test,
disconnect from mains

CL 16532007_003.eps
300101

Figure 5-4

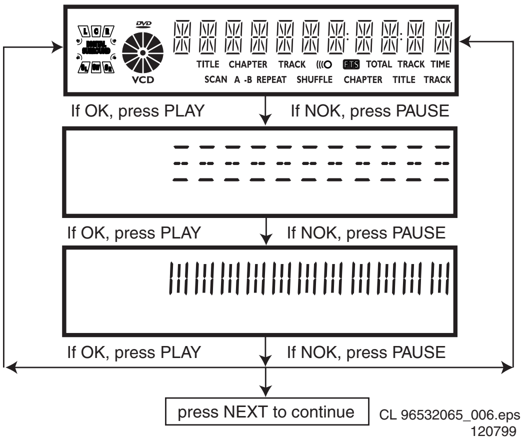
5.3 DISPLAY PCB

5.3.1 DISPLAY TEST

The display test is performed by nucleus DispDisplay. By putting a series of test patterns on the local display, the local display is tested. To step through all different patterns, the user must either press PLAY (pattern is ok) or PAUSE (pattern was incorrect) to proceed to the next pattern. The display of patterns is continued in a cyclic manner until the user presses NEXT. If the user presses NEXT before all display patterns are tested, the DispDisplay nucleus will return TRUE (display test successful).

5.3.2 LED TEST

The LED(s) on the DVD player is (are) tested by nucleus DispLed. The user must check if the LED(s) is (are) lighted; if it is, press PLAY, if it is not, press PAUSE. By pressing NEXT the script will proceed to the next test. If the user presses NEXT before PLAY or PAUSE, the DispLed nucleus will return TRUE (LED test successful).

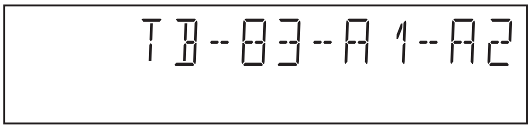


CL 96532065_006.eps
120799

Figure 5-5

5.3.3 KEYBOARD TEST

The keyboard of the DVD player is tested by nucleus DispKeyb. The user is expected to press all keys on the local keyboard once. The code of the key pressed is shown on the local display (1 hexadecimal digit) immediately followed by a (hexadecimal) number indicating how many times that key has been pressed. Example of the local display during this test:



CL 96532065_007.eps
120799

Figure 5-6

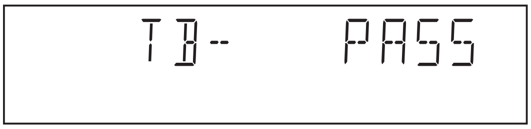
The key-codes displayed on the local display will scroll from right to left when the display gets full, the text "tb-" will remain on display.

key id.	key
0	PLAY
1	NEXT
2	PREVIOUS
3	PAUSE
4	STOP
5	OPEN/CLOSE
6	3D-SURROUND
7	KEY- (Mic Control)
8	Once More (Mic Control)
9	KEY+(Mic Control)
A	STAND BY

CL16532007_007.eps
300101

Figure 5-7

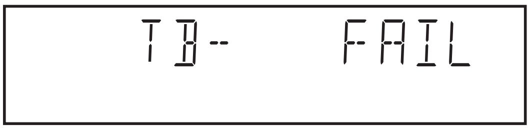
If any keys are detected more than once (due to hardware error), the key-code is displayed twice (or more), with the second digit increased by 1.
If the user does not press all keys minimally once (in any order), the DispKeys nucleus will return FALSE and cause an error in the overall result of the player script.
The test will also pass if all buttons, except the microphone key buttons, are pressed.
The user can leave the keyboard test by pressing the NEXT key on the local display of the DVD player for at least one full second.
The result of the keyboard test is shown on local display as follows:



CL 96532065_009.eps
120799

Figure 5-8

Or



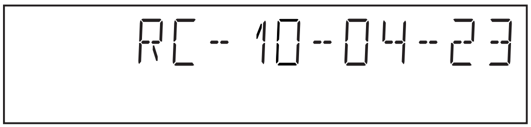
CL 96532065_010.eps
120799

Figure 5-9

Pressing NEXT on the local keyboard again will proceed to the next text.

5.3.4 REMOTE CONTROL TEST

The remote control of the DVD player is tested by nucleus DispRc. The user must press any key on the remote control just once. The codes of the key pressed will be shown on the local display in hexadecimal format. Example:



CL 96532065_011.eps
120799

Figure 5-10

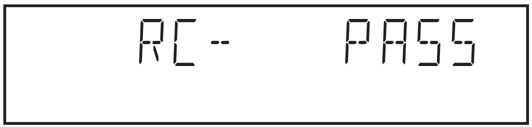
In this example 23 is the hexidecimal code of the pressed RC key. The user can leave the remote-control test by pressing NEXT on the local keyboard of the DVD player. The remote control test is successful if a code was received before the user pressed the NEXT key; pressing the NEXT key before pressing a key on the remote control gives an error in the remote control test (note that the remote control test will also fail if a key on the remote control was pressed but no code was received). The remote control test does not check upon the contents of the received code, that is it will not be checked if the received code matches the key pressed. If desired, the user can manually check this code by using a code-table for the remote control key-codes.

C Key id	Hexadecimal code
STANDBY	**0C**
STOP	**31**
PLAY	**2C**
PLAY BACKWARD	**2D**
PAUSE	**30**
STEP FORWARD	**F6**
STEP BACKWARD	**F5**
FORWARD	**28**
FORWARD 4X	**DF**
FORWARD 8X	**E0**
BACKWARD	**29**
BACKWARD 4X	**DE**
BACKWARD 8X	**DD**
SLOW	**22**
SLOW 2	**D9**
SLOW BACKWARD	**23**
SLOW BACKWARD 2	**DA**
NEXT	**20**
PREVIOUS	**21**
CURSOR UP	**58**
CURSOR DOWN	**59**
CURSOR LEFT	**5A**
CURSOR RIGHT	**5B**
OK	**5C**
0	**0**
1	**1**
2	**2**
3	**3**
4	**4**
5	**5**
6	**6**
7	**7**
8	**8**
9	**9**
TOGGLE	**C8**
ANGLE	**85**
AUDIO	**4E**
SUBTITLES	**4B**
SUBTITLE ON/OFF	**E3**
ROOT MENU	**54**
TITLE MENU	**71**
MENU	**D1**
SETUP MENU	**82**
OSD ON/OFF	**F**
RETURN	**83**
RESUME	**D7**
SCAN	**2A**
SHUFFLE	**1C**
REPEAT	**1D**
A/B REPEAT	**3B**
TOGGLE SCART	**43**
OPEN/CLOSE	**42**
FTS	**FB**
KARAOKE	**E4**
OPTION	**FA**

CL06532096_003.eps
050700

Figure 5-11

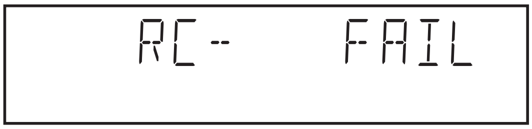
After pressing NEXT, the result of the remote control test is displayed on the local display of the DVD player as follows:



CL 96532065_013.eps
120799

Figure 5-12

Or



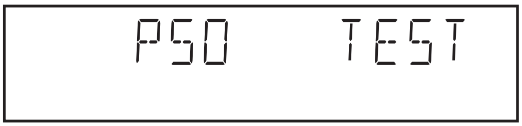
CL 96532065_014.eps
120799

Figure 5-13

Pressing NEXT on the local keyboard again will proceed to the next test.

5.3.5 P50 LOOP-BACK TEST

For the P50 loop-back test, the user must first press a key to decide if the test is to be performed.
The display will show the following message:

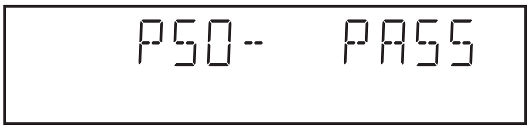


CL 16532007_004.eps
010201

Figure 5-14

If the user presses PAUSE, the P50 test will be skipped.
If the user presses PLAY, the P50 test is performed and the result is displayed as follows:

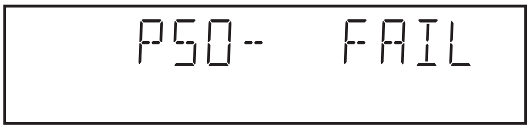
Test successfull:



CL 16532007_005.eps
010201

Figure 5-15

Test fails:



CL 16532007_006.eps
010201

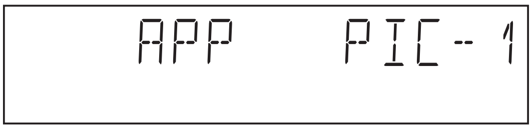
Figure 5-16

Press the NEXT key to continue to the next text

5.4 MONO PCB DIGITAL PART

5.4.1 PICTURE TEST

The picture test is performed by putting a predefined picture (colour bar) on the display (nucleus VideoColDencOn) and asking the user for confirmation. The display will show the following message:



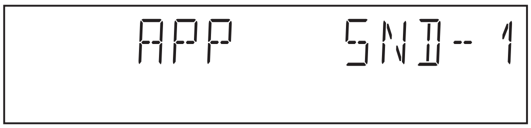
CL 96532065_015.eps
120799

Figure 5-17

By pressing PLAY the user confirms the test, pressing PAUSE will indicate the picture was invisible or incorrect. Pressing NEXT will proceed to the next test

5.4.2 SOUND 1 & SCART DVD TEST

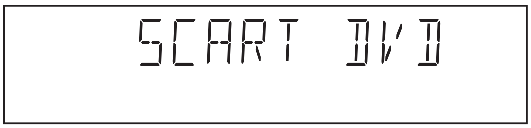
The first soundtest is performed by starting a pink noise sound that needs confirmation from the user (nucleus AudioPinkNoiseOn); the display will show the following message very shortly:



CL 96532065_016.eps
120799

Figure 5-18

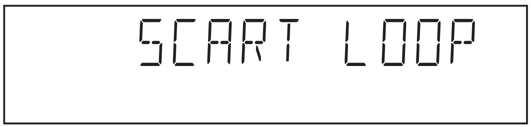
This sound will only be audible from version cut3.1 of Sti5505(item7503 on mono board) onwards. After starting up sound 1, SCART loop-trough will be simultaneously active during this test. SCART loop-trough will be measured with the aid of an external video source.
When entering the SCART loop-trough, the local display indicates:



CL 96532065_017.eps
120799

Figure 5-19

On the TV screen a colour bar (generated by nucleus VideoColDencOn) is visual and the internally generated pinknoise is audible. By pressing PLAY the user confirms the test, pressing PAUSE will indicate the sound was inaudible or incorrect. Pressing NEXT will proceed to the next test; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok). By pressing the NEXT button there will be switched over to the external source, this must become now visible on the TV screen (using the SCART). The local display indicates:



CL 96532065_018.eps
120799

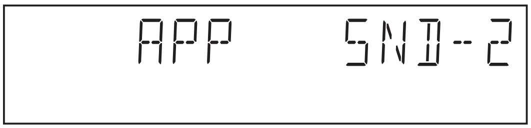
Figure 5-20

The internally generated colour bar is still available on the CVBS and Y/C outputs. And the pinknoise-signal is still available on the cinch audio outputs. By pressing the PREV button, the internal generated colour bar becomes visual again.

The test can be left by pressing the NEXT key for more than one second.

5.4.3 SOUND 2 TEST

The second soundtest is performed by producing a sine sound (nucleus AudioSineOn). The signal can be stopped by pressing the STOP-key. The display will show the following message:



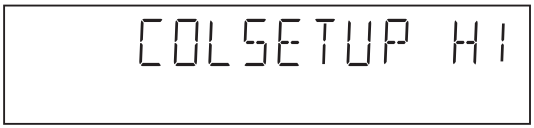
CL 96532065_019.eps
120799

Figure 5-21

By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong. Pressing NEXT will proceed to the next; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok).

5.4.4 Colour setup test

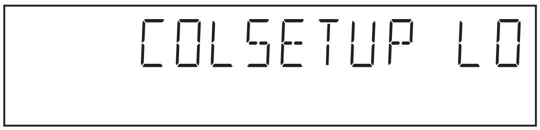
The colour setup test is performed by putting the internally generated colour bar in different settings on the TV screen. The first colour bar will be displayed in setting 1. the display will show the following message:



CL06532096_004.eps
050700

Figure 5-22

By pressing the NEXT button, you can go to the second setting. The local display indicates:



CL06532096_005.eps
050700

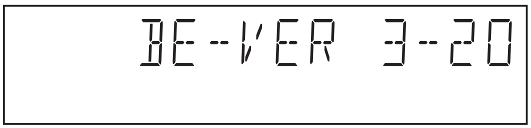
Figure 5-23

By pressing the PREVIOUS button, the colour bar with the first setting becomes visual again.
By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong.
The test can be left by pressing the NEXT key for more than one second; if the user presses NEXT without pressing PLAY or PAUSE first, the result of the test will be TRUE)colour set-up ok).

5.5 BASIC ENGINE

5.5.1 VERSION NUMBER

In the basic engine tests, the version number of the Basic Engine will be shown first, as the following example:



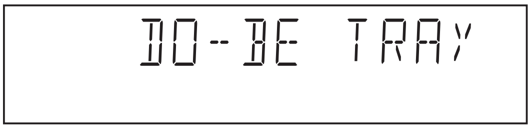
CL 96532065_020.eps
120799

Figure 5-24

By pressing the NEXT key, the Basic Engine tests are started.

5.5.2 TRAY TEST

First, the tray is tested. The purpose of this test is also to give the user the opportunity to put a disc in the tray of the DVD player. Some tests on the Basic Engine require that a disc(e.g. DVD MPTD test disc) is present in the player. At the end of the Basic Engine tests this tray test will be repeated solely to enable the user to remove the disc in the tray. The local display will look as follows:



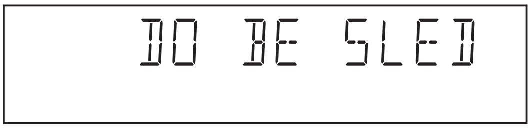
CL 96532065_021.eps
120799

Figure 5-25

By pressing PLAY or PAUSE the user can toggle the position of the tray. Note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT will proceed to the next test, after the tray has been closed (by the software) if it was open.

5.5.3 SLEDGE TEST(visual test)

The second Basic Engine test tests the sledge; the user can move the sledge as many times as desired by using PLAY (nucleus BeSledgeOut) and PAUSE (nucleus BeSledgeIn). Pressing NEXT on the local keyboard proceeds to the next test. Note that this test will not contribute to the test result of the Basic Engine. The local display will look as follows during the sledge test:

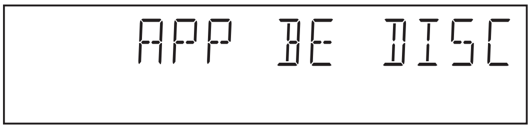


CL 96532065_022.eps
120799

Figure 5-26

5.5.4 DISC MOTOR TEST(visual test)

The third Basic Engine test tests the disc motor (nucleus BeDiscMotorOn); the local display looks as follows:



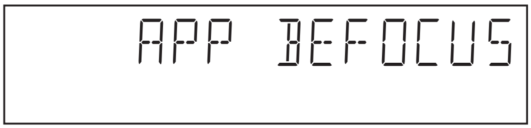
CL 96532065_023.eps
120799

Figure 5-27

By pressing PLAY the user confirms that the disc motor is running; pressing PAUSE indicates the disc motor does not work. Pressing NEXT proceeds to the next test, after a reset of the disc motor (nucleus BeDiscMotorOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (disc motor is running).

5.5.5 FOCUS TEST(visual test)

The fourth Basic Engine test tests the focussing; first focussing is turned on by calling nucleus BeFocusOn. The display will look as follows:



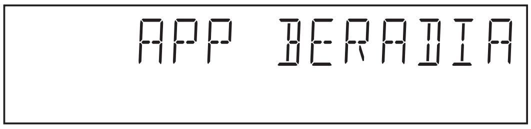
CL 96532065_024.eps
120799

Figure 5-28

By pressing PLAY the user confirms that the focussing was succesful; pressing PAUSE indicates a focussing failure. Pressing NEXT proceeds to the next test after a reset of the focussing (nucleus BeFocusOff); if NEXT is pressed before PLAY or PAUSE, the result of this test will be TRUE (focus successful).

5.5.6 RADIAL TEST(visual & listening test)

The fifth Basic Engine test tests the radial functionality (nucleus BeRadialOn); the local display looks as follows:



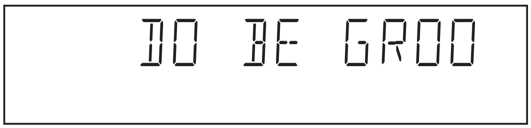
CL 96532065_025.eps
120799

Figure 5-29

By pressing PLAY the user confirms that the radial function worked; pressing PAUSE indicates the function does not work. Pressing NEXT proceeds to the next test, after a reset of the radial (nucleus BeRadialOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (radial successful).

5.5.7 JUMP TEST(listening test)

The sixth and last Basic Engine test tests the jumping by calling nuclei BeGroovesIn, BeGroovesMid and BeGroovesOut. During this test, the local display looks as follows:



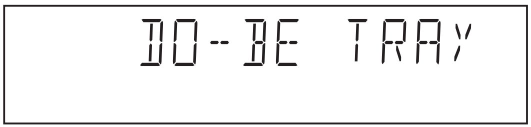
CL 96532065_026.eps
120799

Figure 5-30

The user can switch between the three different types of groove settings by pressing PLAY (forward to next nucleus in the list In-Mid-Out) or PAUSE (backward in the list In-Mid-Out). This is done in a cyclic manner; note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT proceeds to the next test, after the disc motor has been shut off with a call to nucleus BeDiscMotorOff.

5.5.8 TRAY TEST

As a last action for the Basic Engine tests, the tray test is repeated. The local display will look as follows:



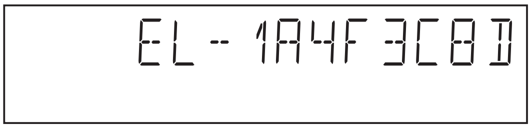
CL 96532065_027.eps
120799

Figure 5-31

This test is meant to give the user the opportunity to remove the disc in the tray. The tray position can be toggled using the PLAY and PAUSE key. The tray will be closed (by the software, if it is open) before proceeding to the next test when the user presses the NEXT key.

5.5.9 ERROR LOG (see table on page 30)

Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player. Reading the error log is done by nucleus LogReadErr. The display during the errorlog readout looks as follows :



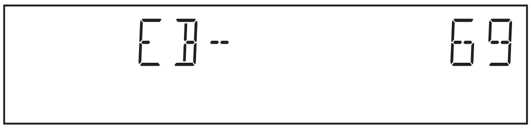
CL 96532065_028.eps
120799

Figure 5-32

By pressing PLAY or PAUSE the user can move forward or backward (respectively) through the logged error codes. The highlighted number indicates which errorcode is currently on display (in the example above, errorcode number 4 is displayed). If "0000" is displayed at all positions, the error log is empty. Display of the logged errors is done in a cyclic manner. The errorcode with the lowest highlighted number is the most recent. By pressing NEXT on the local keyboard, the user can proceed to the next test.

5.5.10 ERROR BITS (see table on page 30)

Reading the error bits is done by nucleus LogReadBits. The display during the errorbits readout looks as follows:



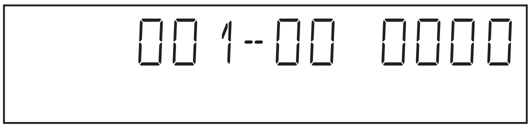
CL 96532065_029.eps
120799

Figure 5-33

Only the set errorbits will be shown by their (decimal) number. Refer to the appropriate documentation for the explanation of each bit number. If the display only shows "EB-0", no error bits were set. By pressing NEXT the user can continue to the next test.

5.6 LOOP TEST (see table below)

At the start of the loop test, the display will show the result of the interactive player test:



CL 96532065_030.eps
120799

Figure 5-34

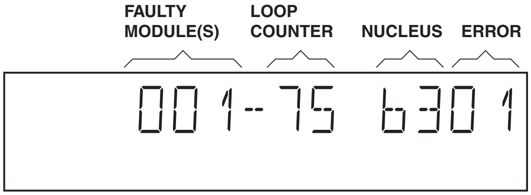
The left side of the display contains a 3-digit code, which can have a value between 000 and 111. These values are to be interpreted as follows:

Displayed Value	Indication for each module		
	Basic Engine	Mono PCB	Display PCB
000	ok	ok	ok
001	ok	ok	faulty
010	ok	faulty	ok
011	ok	faulty	faulty
100	faulty	ok	ok
101	faulty	ok	faulty
110	faulty	faulty	ok
111	faulty	faulty	faulty

CL 96532065_031.eps
120799

Figure 5-35

The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely. The display of the DVD player will display not only the three digits indicating correct/faulty modules and the last found error code (as mentioned, faults are detected as far as they can be within the scope of the diagnostic software), but also a loop counter indicating how many times the loop has been gone through. Example:



CL 96532065_032.eps
120799

Figure 5-36

The number after the hyphen indicates the number of times the loop test has been performed; the 4 digits at the right side of the display show the last error that was found when running the loop test: the leftmost two digits of this code indicate which nucleus resulted in a fault; the rightmost two digits refer to the faultcode within that nucleus. For further explanation of this error code, see list of error codes below.

ERROR CODES LOOP TEST

ERROR CODE	NUCLEUS NUMBER	ERROR DESCRIPTION
0601	6	Calculated checksum of FLASH is not correct
1101	11	I2C bus busy before start
1102		NVRAM access time-out
1103		No NVRAM Acknowledge
1104		NVRAM reply time-out
1201	12	I2C bus busy
1202		I2C bus not working
1203		Slave controller not responding
1204		Slave response is not correct
1301	13	Parity error from basic engine to serial
1302		Parity error from serial to basic engine
1303		No communication between serial and basic engine
1304		Communication time-out error
1601	16	The SDRAM is faulty
5201	52	I2C bus busy
5202		Error sending I2C command to COLOR SETUP IC
5203		Colour setup IC not responding
5204		Colour setup IC response is not correct
5401	54	I2C bus busy
5402		Error sending I2C command to SCART SWITCH IC
5403		SCART Switch is not responding
5403		SCART Switch response is not correct

CL06532096_006.eps
050700

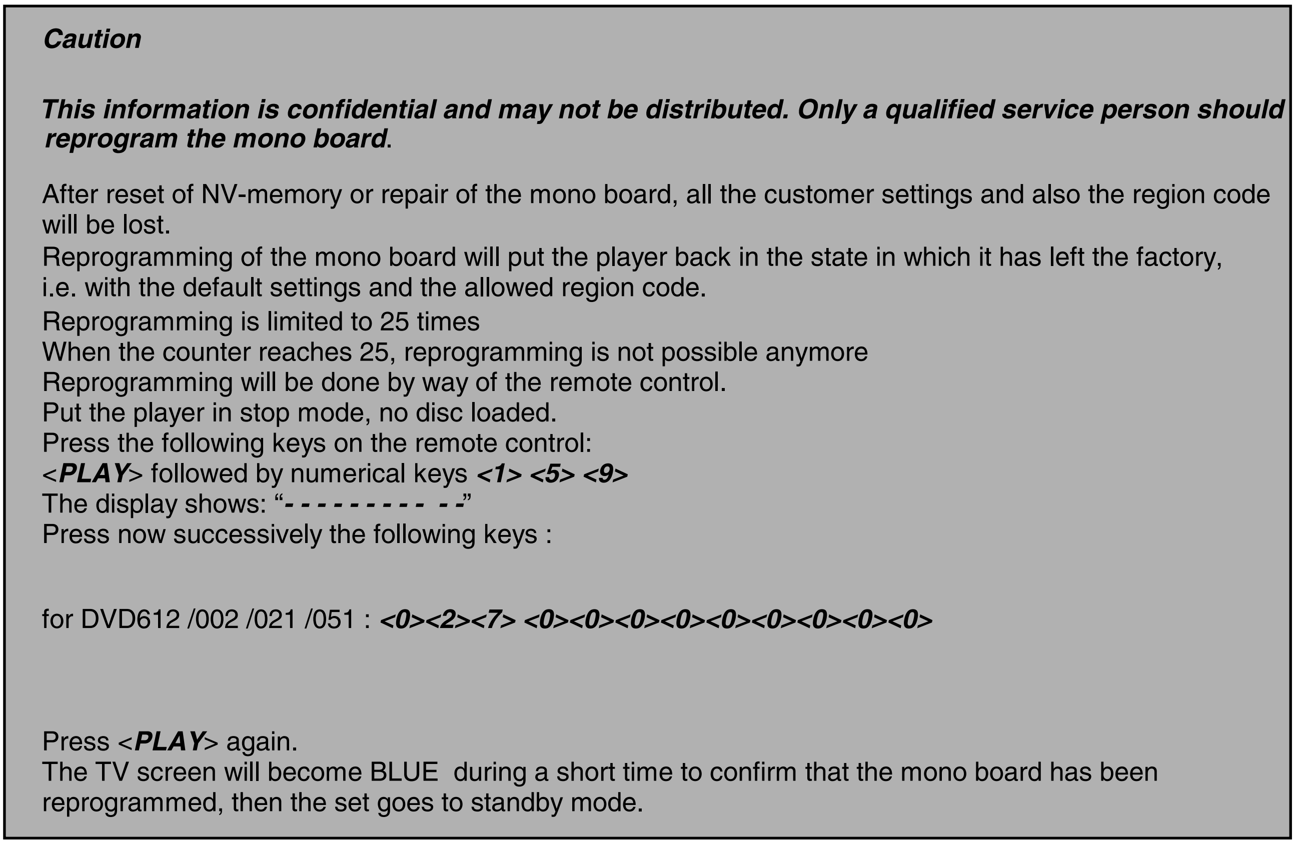
Figure 5-37

Error log / bits table	**Read ERROR LOG in player script**	**Read ERROR BITS in player script**
Basic engine errors	Value:	Value:
Command to the Basic Engine not allowed in this state or unknown command	150101	8
Parameter(s) from the command to the Basic Engine is not valid	150102	7
Sledge could not be moved to the inner home position	150103	6
Focus failure	150104	5
Turntable motor speed could not be reached within timeout	150105	4
Radial servo could not get on track on the disc	150106	3
PLL could not lock in the accessing or tracking state	150107	2
Subcode or sector information could not be read	150108	1
requested subcode could not be found	150109	16
Tray could not be closed or opened completely	15010A	15
TOC could not be read within timeout	15010B	14
The requested seek on the disc could not be executed	15010C	13
A requested lead-in is not on the disc	15010D	12
A non existing burst cutting area is requested	15010E	11
S2b communication error	1501F0	10
S2b communication error	1501F1	9
S2b communication error	1501F3	24
S2b communication error	1501F4	23
S2b communication error	1501F5	22
Digital PWB errors		
Communication error with the Sti 5505	90000	32
Communication error with the Sti 5505	90001	31
Disply processor errors		
Communication error with the display processor	190000	40

5.6.1 Servicing DVD loader

The DVD Loader / mechanism, VAL6011, has to be exchanged completely in case of failure. A new mechanism can be ordered with codenumber 9305 023 61101.

5.6.2 Reprogramming of new mono boards.



Caution

***This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono board*.**

After reset of NV-memory or repair of the mono board, all the customer settings and also the region code will be lost.
Reprogramming of the mono board will put the player back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.
Reprogramming is limited to 25 times
When the counter reaches 25, reprogramming is not possible anymore
Reprogramming will be done by way of the remote control.
Put the player in stop mode, no disc loaded.
Press the following keys on the remote control:
<***PLAY***> followed by numerical keys ***<1> <5> <9>***
The display shows: “**- - - - - - - - - - -**”
Press now successively the following keys :

for DVD612 /002 /021 /051 : ***<0><2><7> <0><0><0><0><0><0><0><0><0>***

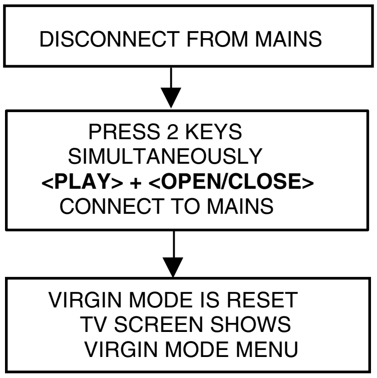
Press <***PLAY***> again.
The TV screen will become BLUE during a short time to confirm that the mono board has been reprogrammed, then the set goes to standby mode.

CL 16532007_008.eps
010201

Figure 5-38

5.6.3 Reset of Virgin Mode

After the player has been powered up for test by the dealer, it would have gone through the Virgin Mode. It is possible to reset the settings made during that mode before the delivery of player to the customer. This can be done as shown in the following diagram:


DISCONNECT FROM MAINS
PRESS 2 KEYS SIMULTANEOUSLY <PLAY> + <OPEN/CLOSE> CONNECT TO MAINS
VIRGIN MODE IS RESET TV SCREEN SHOWS VIRGIN MODE MENU

CL 96532065_034.eps
070700

Figure 5-39

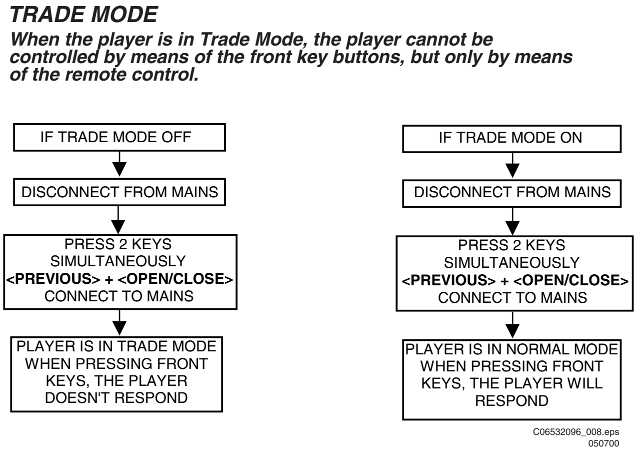

TRADE MODE
When the player is in Trade Mode, the player cannot be controlled by means of the front key buttons, but only by means of the remote control.
IF TRADE MODE OFF
DISCONNECT FROM MAINS
PRESS 2 KEYS SIMULTANEOUSLY <PREVIOUS> + <OPEN/CLOSE> CONNECT TO MAINS
PLAYER IS IN TRADE MODE WHEN PRESSING FRONT KEYS, THE PLAYER DOESN'T RESPOND
IF TRADE MODE ON
DISCONNECT FROM MAINS
PRESS 2 KEYS SIMULTANEOUSLY <PREVIOUS> + <OPEN/CLOSE> CONNECT TO MAINS
PLAYER IS IN NORMAL MODE WHEN PRESSING FRONT KEYS, THE PLAYER WILL RESPOND

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Figure 5-40

5.7 Test Instruction Audio/Video Board

These test instructions can be used for all versions of the A/V board which has the following outputs:

- Audio L/R
- 5.1 Audio output
- Subwoofer output
- Optical / Coaxial digital output
- CVBS
- Y/G_vid,U/B_vid,V/R_vid output
- S-video
- Scart output

5.7.1 General

- All the waveforms measurement carried out in these test instruction will be base on the testpoint indicated in the A/V board schematic diagram in the Service manual.
- Impedance of the measuring-equipment should be > 1MΩ
- Most of the tests can be done using either the Diagnostic software “ Player script” which can be found in the chapter “Diagnostic Software description and troubleshooting” or the Menu interface using the Service PC with a terminal emulation program (e.g. Window Hyperterminal) where it is possible to control the execution of the Diagnostic Nuclei
- Setup for the measurement will be done in set level with all modules connected as shown in the Wiring Block diagram.

5.7.2 General start-up measurement

Supply check:
Before starting the measurement,ensure that all power supply are connected to the A/V board.

Pin nbr	Supply
1010-9	-5V (-Vcc)
1010-10	+5V
1010-11	+5V

The supply currents can be measured using a Tektronics AM503B current probe or equivalent.

Supply	Power consumption (AVG)
+5VA	+5V ± 3% I = 200mA
+5Vvid	+5V ± 3% I = 200mA
-5V	-5V ± 3% I = 200mA

Clock Check
Ensure the present of the clock to the DAC

Clock Name	Testpoint	Frequency
PCM_CLK	TP10	11.2896MHz ± 0.02% tolerance

Audio mute check
Measure the Audio mute voltage input at pin 12 of connector 1010

Status	Value
AudioMuteOn	4.7V ± 10%
AudioMuteOff	-8V ± 10%

To toggle between ON and OFF,use the following commands:

Ref.#	Command Name	Remarks
19a	AudioMuteOn	Audio Mute On
19b	AudioMuteOff	Audio Mute Off

5.7.3 Audio DAC and amplifier

Ensure that the Audio mute signal is OFF
To check the DAC and buffer amplifier,send the following commands:

Ref.#	Command Name	Remarks	Audio output
21a	AudioSineOn	Audio Sine signal ON	Sine,1Khz on stereo
----	Press stop button	Audio Sine signal OFF	No waveform
20a	AudioPinkNoiseOn	Audio Pinknoise ON	Pink Noise on 6 channels
20b	AudioPinkNoiseOff	Audio Pinknoise OFF	No waveform

The audio signal (sine or pink noise) will also be present on the digital output (SPDIF).This can be checked by connecting digital signal to an amplifier with digital input.
Check the I2S and audio signal at the following testpoints:

Name	Testpoint
LRCLK	TP8
SCLK	TP9
PCM_CLK	P10
PCM_OUT0	TP7
PCM_OUT1	TP27
PCM_OUT2	TP28
SPDIF	TP11
Front L/R out-Audio cinch	TP13
H/P L/R out	TP20
Analog out -Audio cinch	TP25

All waveforms can be refer to the waveform diagram in the chapter “Diagnostic software description and troubleshooting”.

5.7.4 Video output and buffer amplifier

Check DC output-level at all video cinch output : 1.0V DC ± 10%
Generate a color bar using the following software commands:

Ref.#	Command Name	Remarks
23a	VideoColDencOn	Colour DENC ON
61a	VideoColOutRGB	RGB Colourbar
61b	VideoColOutYUV	YUV Colourbar
23b	VideoColDencOff	Colourbar DENC OFF

Check the video outputs at the following testpoints:

Name	Testpoint
B_VID	TP1
G_VID	TP2
R_VID	TP3
CVBS out	TP14
S-Video-C out	TP15
S-Video-Y out	TP16
Y out	TP17
U out	TP18
V out	TP19

All waveforms can be refer to the waveform diagram in the chapter “Diagnostic Software description and troubleshooting”.

5.7.5 Play and 16/9 detection

Check DC voltage at S-Video-chroma output (pin 4) with a 6K8 ohm load and Scart connector (pin 8) and change the 0/6/12 input (1010-8) using the following commands:

Ref.#	Command Name	Remarks	Chroma output
25a	VideoScartLo	Sends out 0V ± 0.5V	<0.1V
25b	VideoScartMi	Sends out 6V ± 10%	2.0V ± 10% with load
			5.0V ± 10% without load
25c	VideoScartHi	Sends out 12V ± 10%	<0.1V

5.7.6 Kill circuit

To check the functionality of the Kill circuitry,the audio outputs has to be present by the following command:

Ref.#	Command Name	Remarks	Audio output
21a	AudioPinkNoiseOn	Audio Pinknoise ON	Pink Noise on 6 channels

Check the audio outputs at the audio cinch of the A/V board : Pink Noise
Activate the Kill circuit by using the following command:

Ref.#	Command Name	Remarks
19a	AudioMuteOn	Audio Mute On

Check the audio outputs at the audio cinch of the A/V board : No waveform
Switch off the kill circuit by using the following command:

Ref.#	Command Name	Remarks
19b	AudioMuteOff	Audio Mute Off

Check the audio outputs at the audio cinch of the A/V board : Pink Noise

5.8 Test instructions Display board

5.8.1 Introduction

These test instructions are written for all versions of the display PCBAS.
The contents of the PCB can be split up into next blocks:

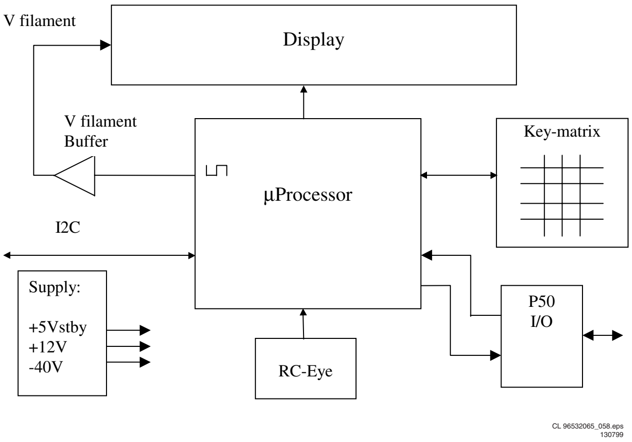


Figure 5-41

5.8.2 Functionality description:

The essential component of the display PCB is the µP (slave). This slave works on an 8MHz resonator and has a reset circuit that is triggered by the +5Vstby. After the reset pulse, the standby control line will release the reset of the host µP. This host µP will then initialise the slave. In addition, when going to stand-by, the slave will put the host µP in reset. When the slave receives the right IR or key code to leave the standby mode, the reset of the host µP will be released.
Other slave functions are:

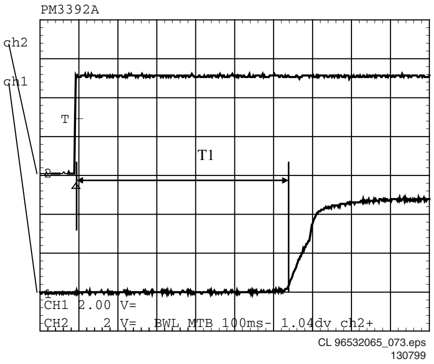
- Square signal generator to generate the filament voltage, which is required for an AC FTD.
- Generates the grid and segment scanning for the FTD.
- Generates a scanning grid for the keys (separated from display scanning).
- Has inputs for RC (RC5 and RC6) and P50 (P50 controller is built in).

5.8.3 General

- Oscilloscope measurements have been carried out using a Philips PM3392A.
- Impedance of measuring-equipment should be > 1MΩ.
- To do correct measurements we recommend to use supply 3122 427 22570.

5.8.4 Reset

Check next reset timing with an oscilloscope at pin 10 of the microprocessor.



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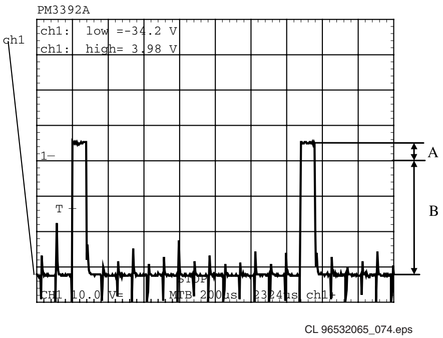
130799

Figure 5-42

Timing: 400msec < T1 > 700msec.
CH1: +5Vstby voltage at power on.
CH2: Voltage at pin 10.

5.8.5 Display steering

Check next timing and level for all grid-lines (G1 r G14).



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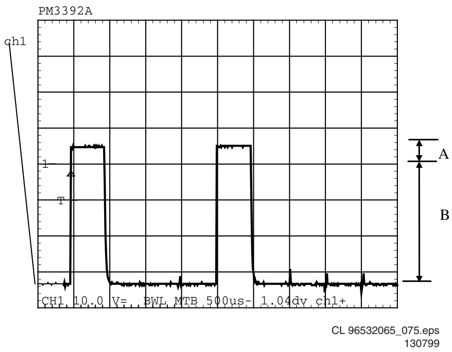
130799

Figure 5-43

1. Check level A: +4V5 +/-10% for grid lines 1 => 11
2. Check level A: +4V0 +/-10% for grid lines 12 => 14
3. Check level B: -33V +/-10%
4. Check timing and levels of segment-lines P1 => P10:



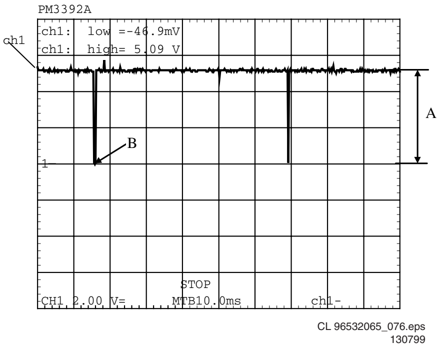
CL 96532065_075.eps
130799

Figure 5-44

Level A:+4V5 +/-10%
Level B:-33V +/-10%
The data on these segment lines depend on the characters that are displayed.
The characters can be set by sending I2C commands to the display.
See the Slave URS how to send a display command.

5.8.6 Key-matrix

Connect a extra 10kΩ pull-up to pin 36 en 37 of the µP and check next matrix scanning at these pins.



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130799

Figure 5-45

Level A: 5.0V +/-7%
Level B: 0V +/-200mV
Check matrix scanning from pin 26 until 33 of the µP.
The results should be the same as the diagram above.

5.8.7 I.R. receiver

Check at pin 23 of the µP if this line switches from low (< 0.3V) to high (> 4.5V), while pressing a key on a Philips RC5 or RC6 remote control.

5.8.8 Karaoke interface

The karaoke interface (4 lines) is a single direction communication.
This means that it consists of four µP output lines.
The interface can be checked by setting or resetting these output-ports via the I2C bus.
Send next command via the I2C bus:
Address : 0x70
Command byte : 0x24
Data byte : xxxxabcd
Where : a = Karaoke reset.
: b = Karaoke data.
: c = Karaoke clock.
: d = Karaoke strobe.

5.8.9 P50 interface

P50 is a bi-directional serial interface, which is used for communication between video equipment. For European sets, this communication goes via pin 10 of the scart-bus. In other regions, it can be a cinch bus at the back of the set.

1. Keep the µP in reset by short-circuiting emitter and collector of transistor 7108, via resistor 3100 and 3104 transistor 7101 is switched on.
2. Check the voltage at the P50 output connector 1118-5: < 200mV.

When the reset is released the µP output-pin becomes low and transistor 7101 is switched off.

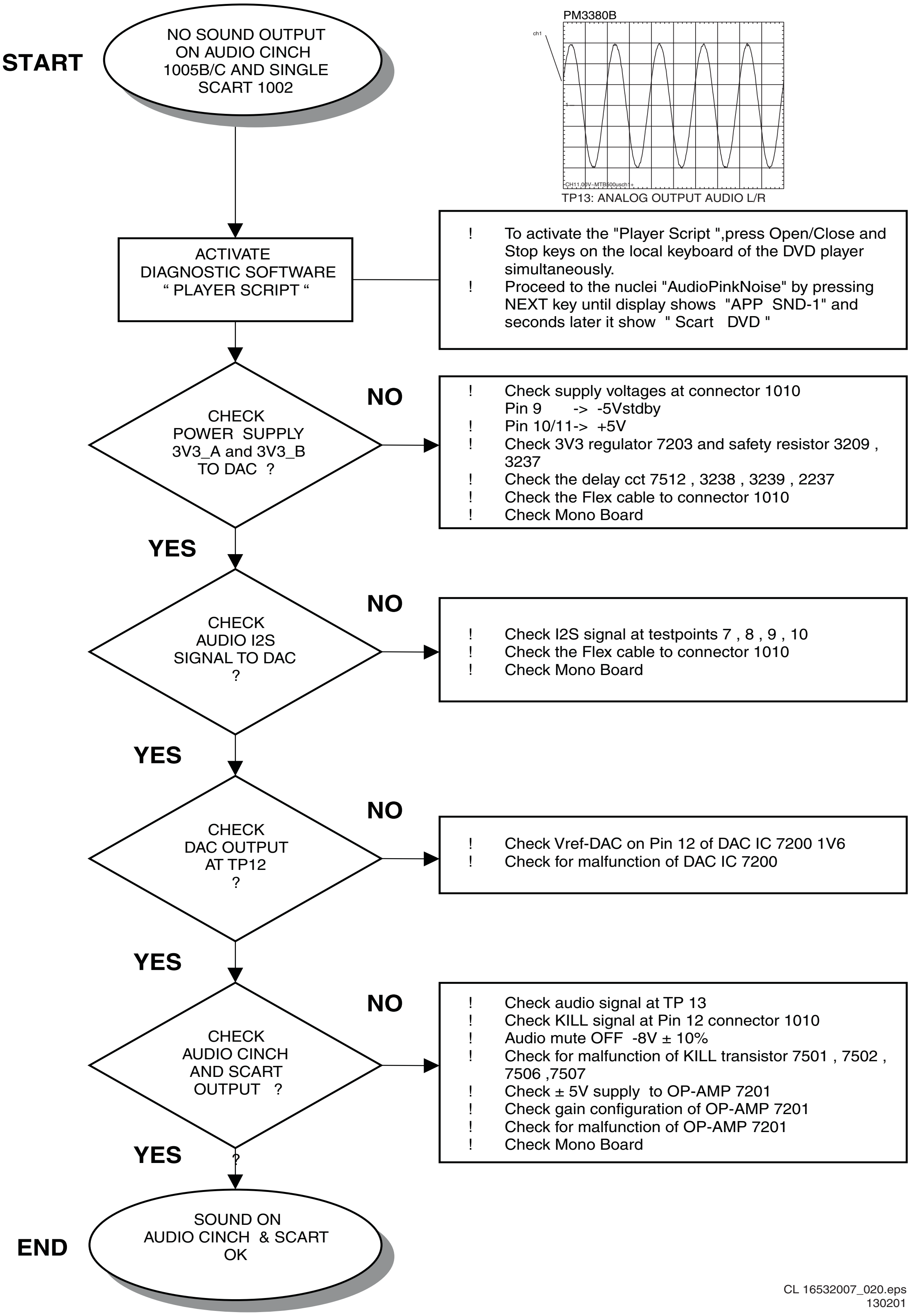
1. Check the voltage at the P50 output connector 1118-5: 4V9 +/-5%.
2. Check also the µP P50 input (µP pin 20): 5V +/-5%.
3. Connect the P50 line (connector 1118-5) to ground.
4. Check again the µP P50 input (µP pin 20): <0V3.

5.9 Troubleshooting

5.9.1 Troubleshooting A/V board

Testing of A/V board can be done using diagnostic software “PLAYER SCRIPT”.
MONO board is used to generate a sound with the sound tests SND-1 and SND-2 or a VIDEO signal with the picture “DIAGNOSTIC SOFTWARE: SCRIPT INTERFACES”.

AUDIO PART OF AUDIO/VIDEO BOARD 3139 243 30241


START
NO SOUND OUTPUT ON AUDIO CINCH 1005B/C AND SINGLE SCART 1002
PM3380B
ch1
1
CH11.00V~MTB500usch1+
ACTIVATE DIAGNOSTIC SOFTWARE “ PLAYER SCRIPT “
CHECK POWER SUPPLY 3V3_A and 3V3_B TO DAC ?
NO
YES
CHECK AUDIO I2S SIGNAL TO DAC ?
NO
YES
CHECK DAC OUTPUT AT TP12 ?
NO
YES
CHECK AUDIO CINCH AND SCART OUTPUT ?
NO
YES
?
END
SOUND ON AUDIO CINCH & SCART OK

TP13: ANALOG OUTPUT AUDIO L/R

! To activate the "Player Script ",press Open/Close and Stop keys on the local keyboard of the DVD player simultaneously.
! Proceed to the nuclei "AudioPinkNoise" by pressing NEXT key until display shows "APP SND-1" and seconds later it show " Scart DVD "

! Check supply voltages at connector 1010
Pin 9 -> -5Vstdby
! Pin 10/11-> +5V
! Check 3V3 regulator 7203 and safety resistor 3209 , 3237
! Check the delay cct 7512 , 3238 , 3239 , 2237
! Check the Flex cable to connector 1010
! Check Mono Board

! Check I2S signal at testpoints 7 , 8 , 9 , 10
! Check the Flex cable to connector 1010
! Check Mono Board

! Check Vref-DAC on Pin 12 of DAC IC 7200 1V6
! Check for malfunction of DAC IC 7200

! Check audio signal at TP 13
! Check KILL signal at Pin 12 connector 1010
! Audio mute OFF -8V ± 10%
! Check for malfunction of KILL transistor 7501 , 7502 , 7506 ,7507
! Check ± 5V supply to OP-AMP 7201
! Check gain configuration of OP-AMP 7201
! Check for malfunction of OP-AMP 7201
! Check Mono Board

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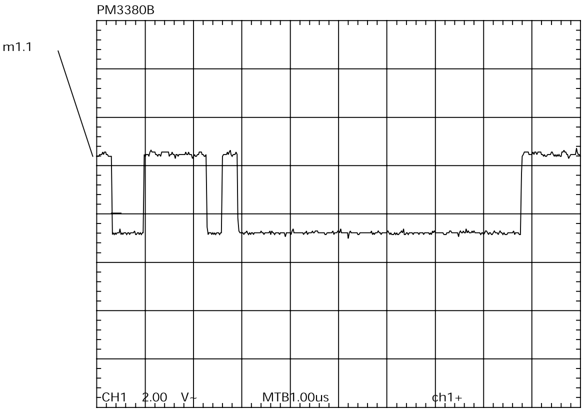
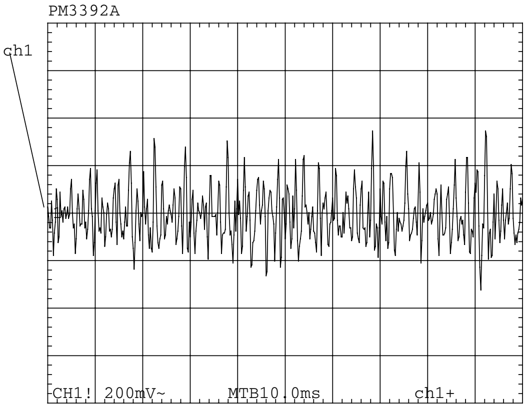
MC-Service

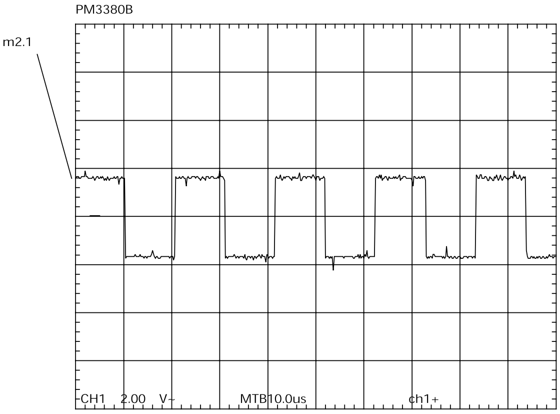
AUDIO WAVEFORM MEASUREMENT



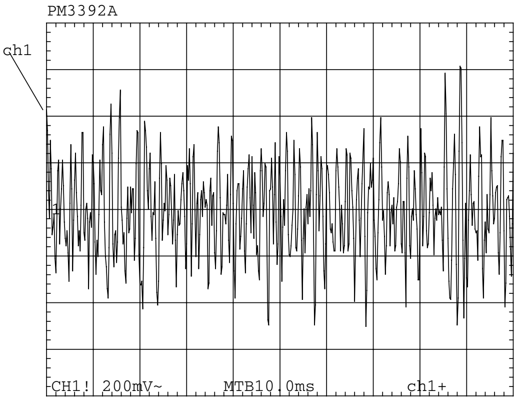
TP 7: PCM_OUT0



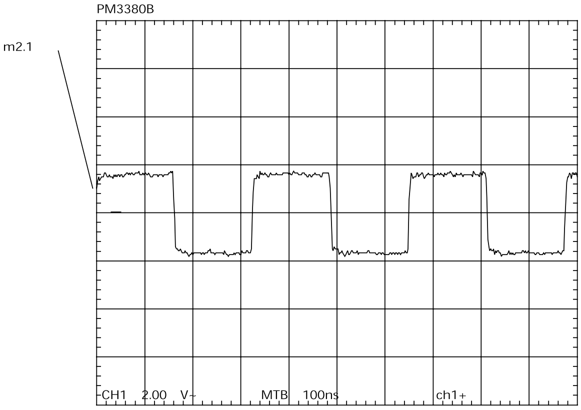
TP24 : ANALOG OUT DAC (PINK NOISE)



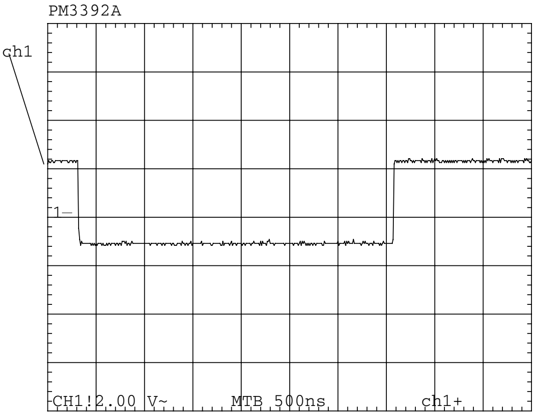
TP8: LRCLK



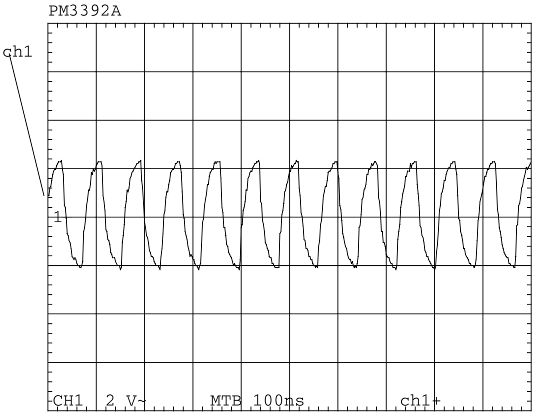
TP25 : ANALOG OUT AUDIO CINCH (PINK NOISE)



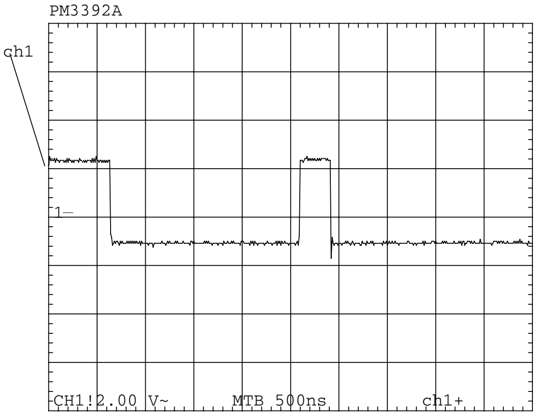
TP9: SCLK



TP27: PCM_OUT 1



TP10: PCM_CLK



TP28 : PCM_OUT 2

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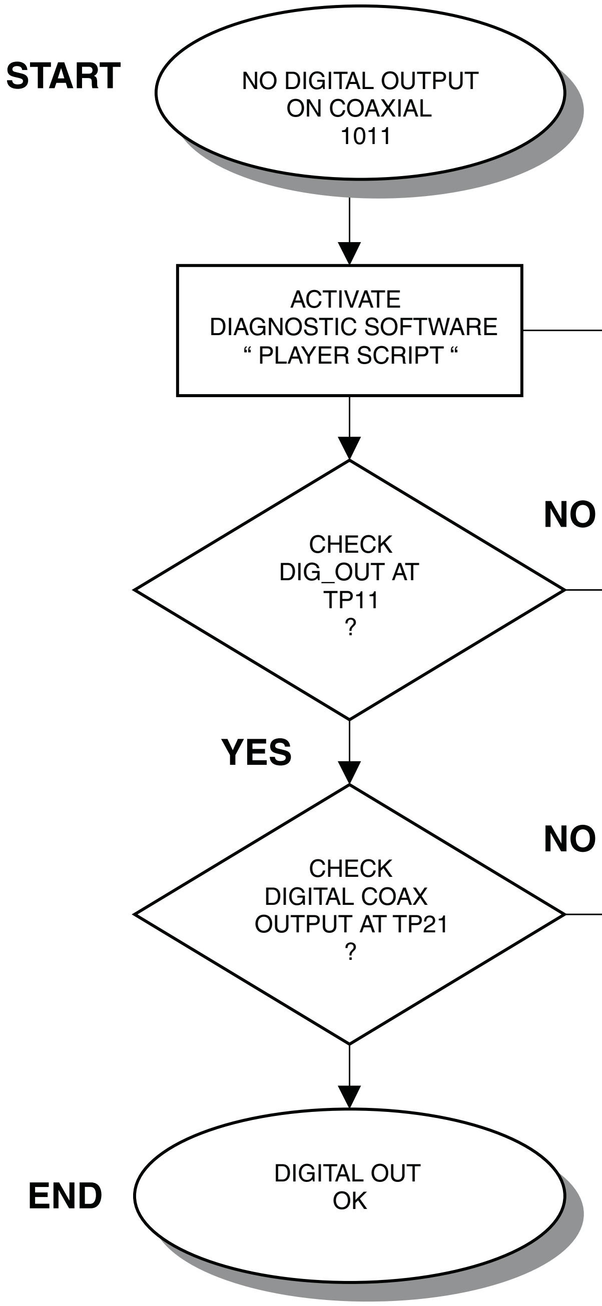
AUDIO PART OF AUDIO/VIDEO BOARD 3139 243 30241


START
NO DIGITAL OUTPUT ON COAXIAL 1011
ACTIVATE DIAGNOSTIC SOFTWARE “ PLAYER SCRIPT “
CHECK DIG_OUT AT TP11 ?
NO
YES
CHECK DIGITAL COAX OUTPUT AT TP21 ?
NO
END
DIGITAL OUT OK

! To activate the "Player Script ",press Open/Close and Stop keys on the local keyboard of the DVD player simultaneously.

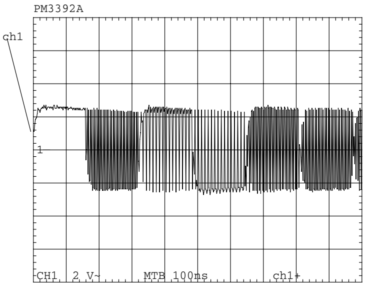
! Proceed to the nuclei "AudioPinkNoise" by pressing NEXT key until display shows "APP SND-1" and seconds later it show " Scart DVD ".

! Check Flex cable to connector 1010.

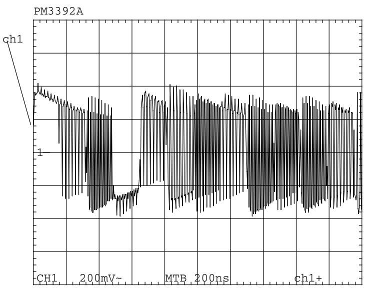
! Check Mono Board.

! Check coupling transformer 5200.

! Check coupling components 3235, 3236, 2232.



TP 11: DIG_OUT



TP 21: DIGITAL OUT

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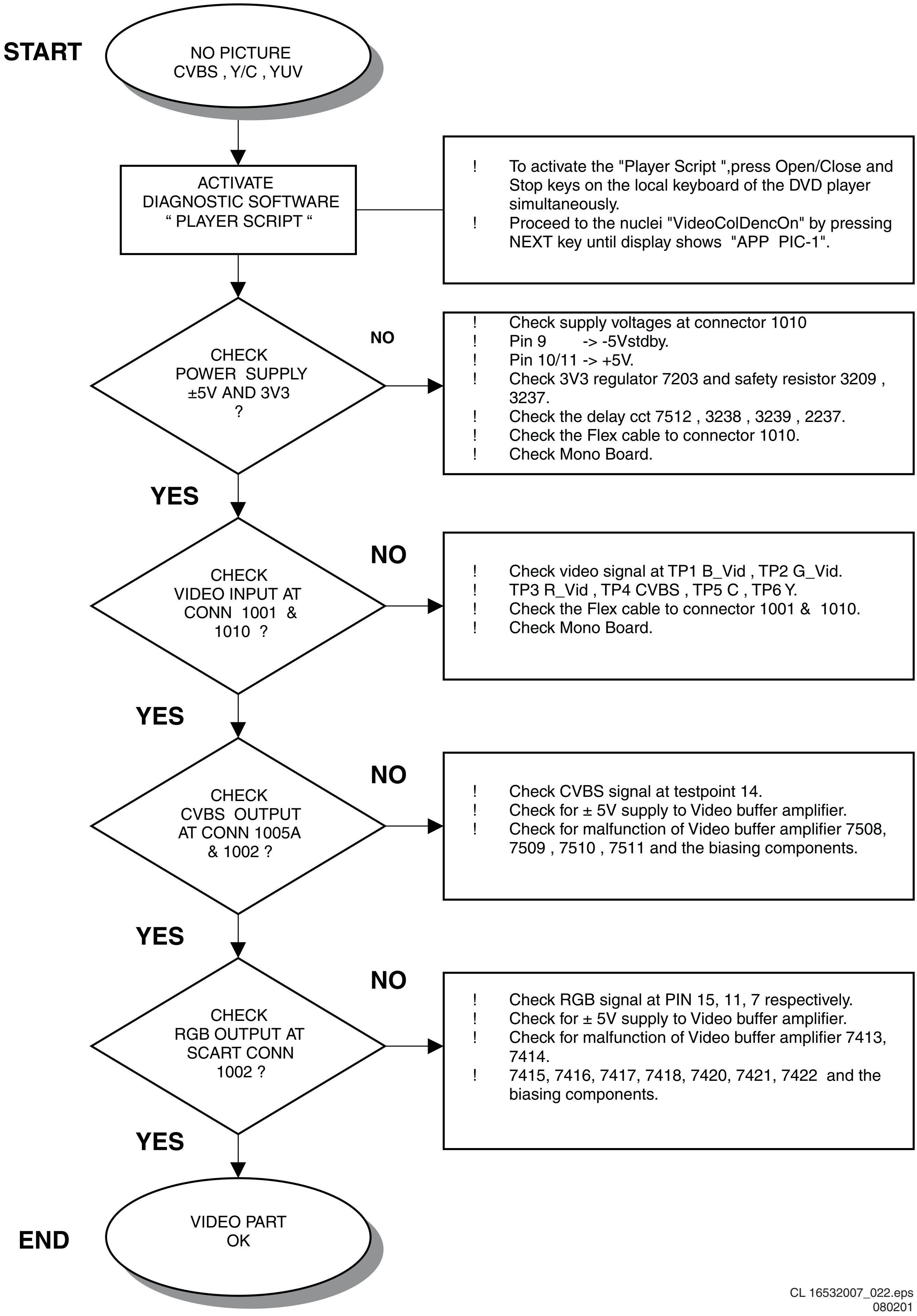
VIDEO PART OF AUDIO/VIDEO BOARD 3139 243 30241


START
NO PICTURE
CVBS , Y/C , YUV
ACTIVATE
DIAGNOSTIC SOFTWARE
“ PLAYER SCRIPT “
CHECK
POWER SUPPLY
±5V AND 3V3
?
NO
YES
CHECK
VIDEO INPUT AT
CONN 1001 &
1010 ?
NO
YES
CHECK
CVBS OUTPUT
AT CONN 1005A
& 1002 ?
NO
YES
CHECK
RGB OUTPUT AT
SCART CONN
1002 ?
NO
YES
END
VIDEO PART
OK
CL 16532007_022.eps
080201

! To activate the "Player Script ",press Open/Close and Stop keys on the local keyboard of the DVD player simultaneously.
! Proceed to the nuclei "VideoColDencOn" by pressing NEXT key until display shows "APP PIC-1".

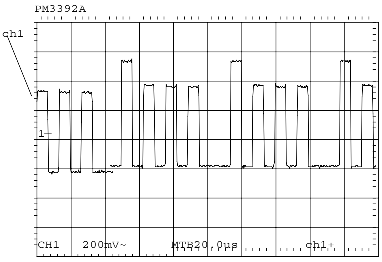
! Check supply voltages at connector 1010
! Pin 9 -> -5Vstdby.
! Pin 10/11 -> +5V.
! Check 3V3 regulator 7203 and safety resistor 3209 , 3237.
! Check the delay cct 7512 , 3238 , 3239 , 2237.
! Check the Flex cable to connector 1010.
! Check Mono Board.

! Check video signal at TP1 B_Vid , TP2 G_Vid.
! TP3 R_Vid , TP4 CVBS , TP5 C , TP6 Y.
! Check the Flex cable to connector 1001 & 1010.
! Check Mono Board.

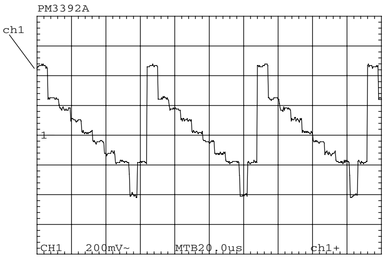
! Check CVBS signal at testpoint 14.
! Check for ± 5V supply to Video buffer amplifier.
! Check for malfunction of Video buffer amplifier 7508, 7509 , 7510 , 7511 and the biasing components.

! Check RGB signal at PIN 15, 11, 7 respectively.
! Check for ± 5V supply to Video buffer amplifier.
! Check for malfunction of Video buffer amplifier 7413, 7414.
! 7415, 7416, 7417, 7418, 7420, 7421, 7422 and the biasing components.

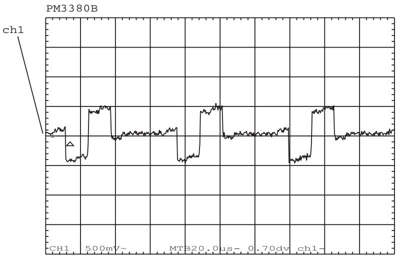
VIDEO WAVEFORM MEASUREMENT



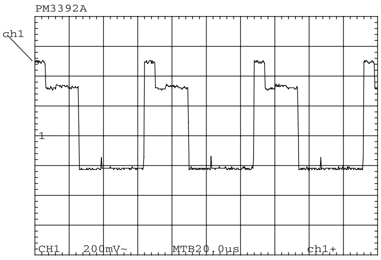
TP 1 : VIDEO B



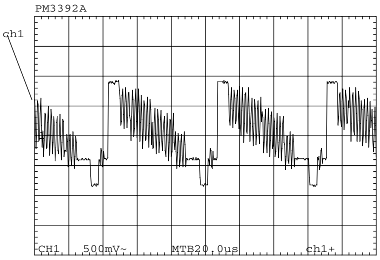
TP 6 : Y_ENC



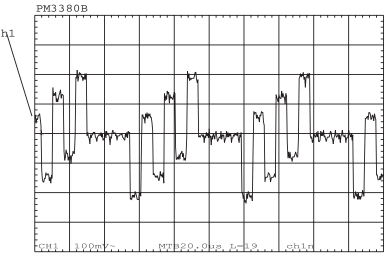
TP 19 : V_VID OUT



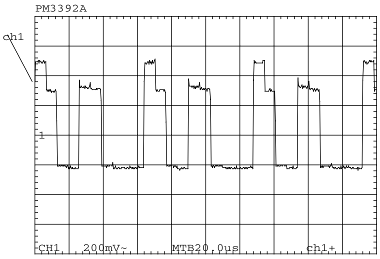
TP 2 : VIDEO G



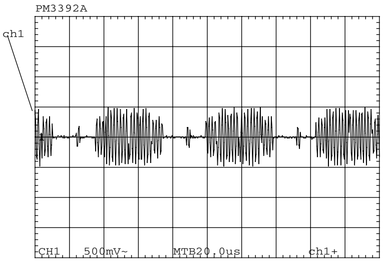
TP 14 : CVBS_OUT



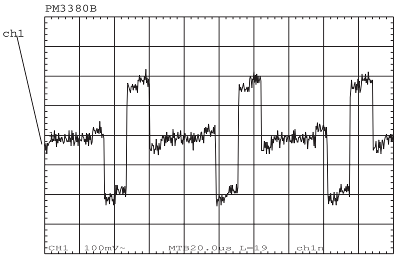
TP 22 : U_ VID



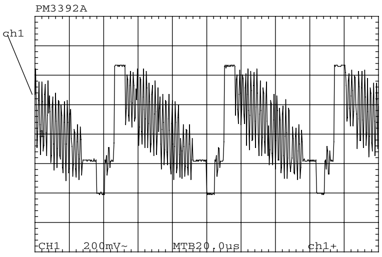
TP 3 : VIDEO R



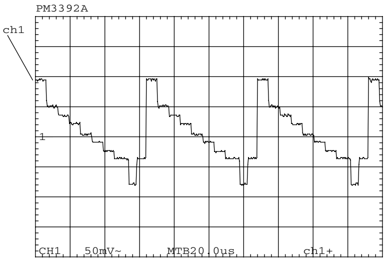
TP 15 : C_OUT



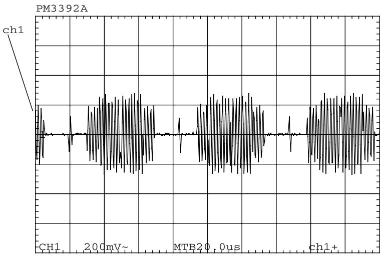
TP 23 : V_ VID



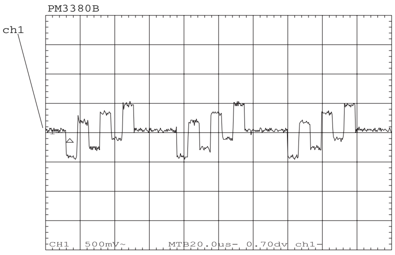
TP 4 : CVBS



TP 16 /17 : Y_OUT



TP 5: C_ENC



TP 18 : U_VID OUT

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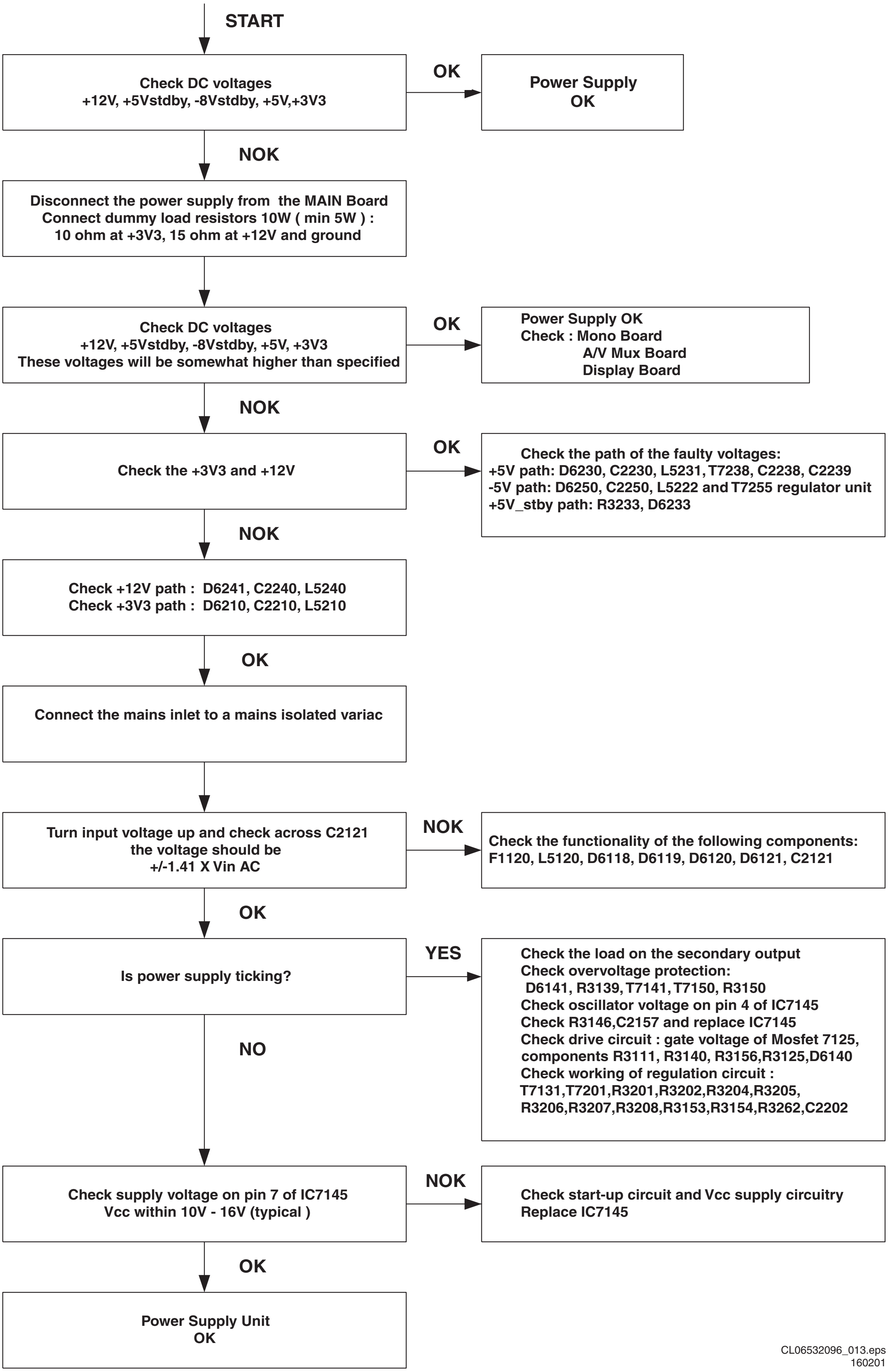
080200

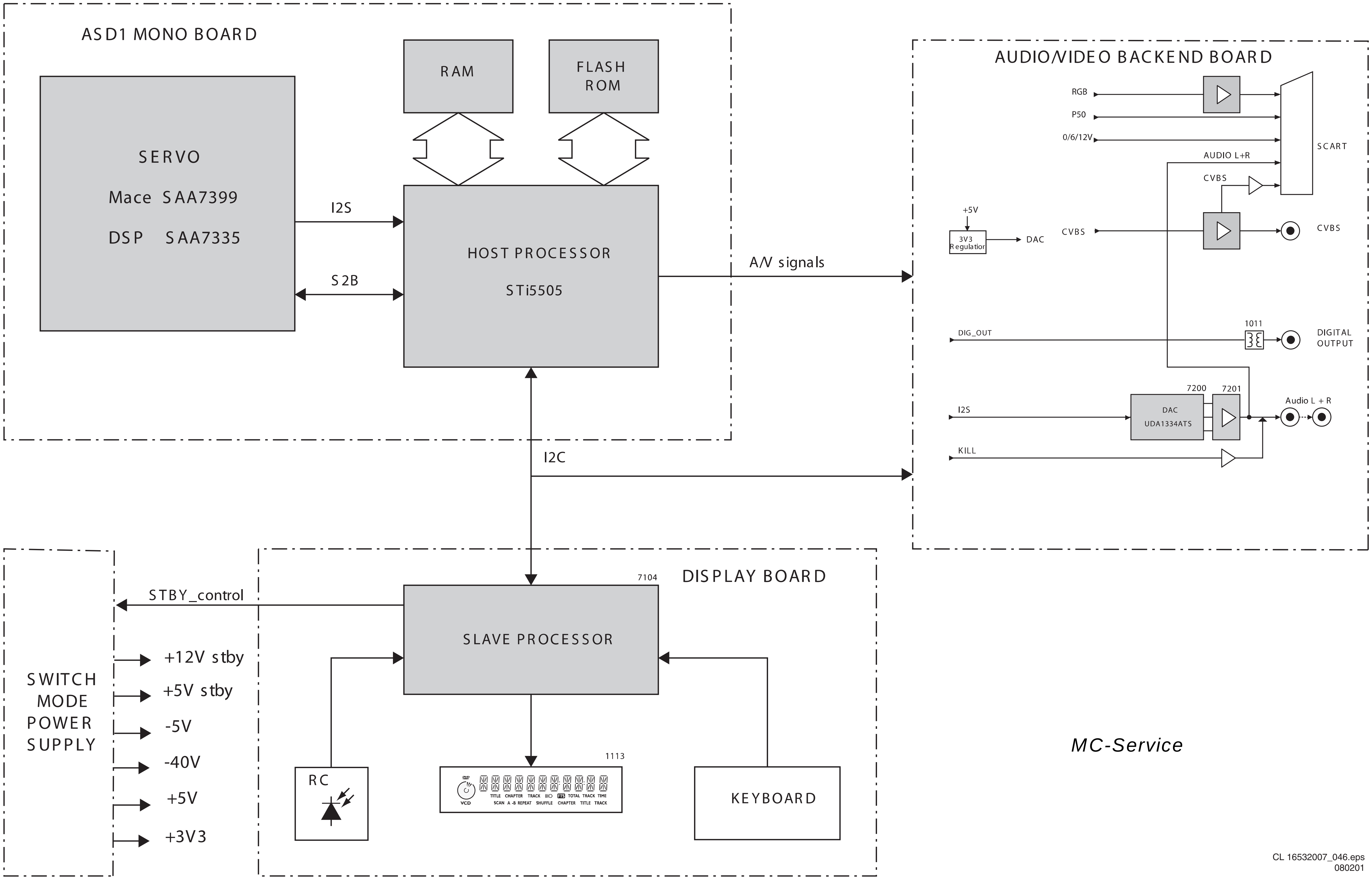
TROUBLESHOOTING POWER SUPPLY UNIT VFM EURO


START
Check DC voltages
+12V, +5Vstdby, -8Vstdby, +5V,+3V3
OK
Power Supply
OK
NOK
Disconnect the power supply from the MAIN Board
Connect dummy load resistors 10W (min 5W) :
10 ohm at +3V3, 15 ohm at +12V and ground
Check DC voltages
+12V, +5Vstdby, -8Vstdby, +5V, +3V3
These voltages will be somewhat higher than specified
OK
Power Supply OK
Check : Mono Board
A/V Mux Board
Display Board
NOK
Check the +3V3 and +12V
OK
Check the path of the faulty voltages:
+5V path: D6230, C2230, L5231, T7238, C2238, C2239
-5V path: D6250, C2250, L5222 and T7255 regulator unit
+5V_stby path: R3233, D6233
NOK
Check +12V path : D6241, C2240, L5240
Check +3V3 path : D6210, C2210, L5210
OK
Connect the mains inlet to a mains isolated variac
Turn input voltage up and check across C2121
the voltage should be
+/-1.41 X Vin AC
NOK
Check the functionality of the following components:
F1120, L5120, D6118, D6119, D6120, D6121, C2121
OK
Is power supply ticking?
YES
Check the load on the secondary output
Check overvoltage protection:
D6141, R3139, T7141, T7150, R3150
Check oscillator voltage on pin 4 of IC7145
Check R3146,C2157 and replace IC7145
Check drive circuit : gate voltage of Mosfet 7125,
components R3111, R3140, R3156,R3125,D6140
Check working of regulation circuit :
T7131,T7201,R3201,R3202,R3204,R3205,
R3206,R3207,R3208,R3153,R3154,R3262,C2202
NO
Check supply voltage on pin 7 of IC7145
Vcc within 10V - 16V (typical)
NOK
Check start-up circuit and Vcc supply circuitry
Replace IC7145
OK
Power Supply Unit
OK
CL06532096_013.eps
160201

6. Block- and wiringdiagram.

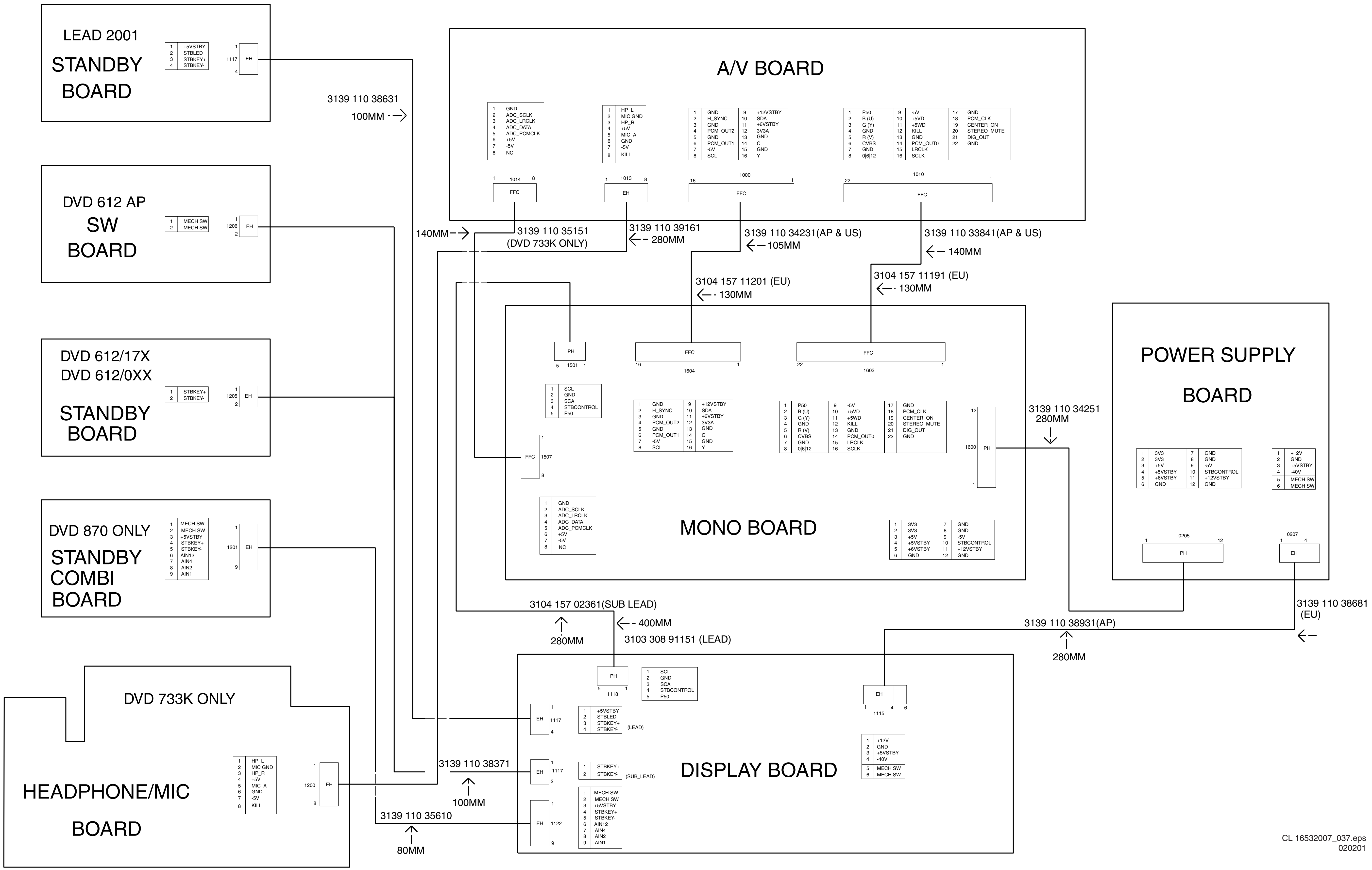
Blockdiagram DVD 612 /XX1

Block Diagram DVD612/XX1


ASD1 MONO BOARD
SERVO
Mace SAA7399
DSP SAA7335
RAM
FLASH ROM
I2S
S2B
HOST PROCESSOR
STi5505
A/V signals
I2C
AUDIO/VIDEO BACKEND BOARD
RGB
P50
0/6/12V
AUDIO L+R
CVBS
SCART
+5V
3V3 Regulatior
DAC
CVBS
CVBS
DIG_OUT
1011
DIGITAL OUTPUT
7200
7201
I2S
DAC
UDA1334ATS
Audio L + R
KILL
STBY_control
7104
DISPLAY BOARD
SLAVE PROCESSOR
SWITCH MODE POWER SUPPLY
+12V stby
+5V stby
-5V
-40V
+5V
+3V3
1113
RC
KEYBOARD

CL 16532007_046.eps
080201

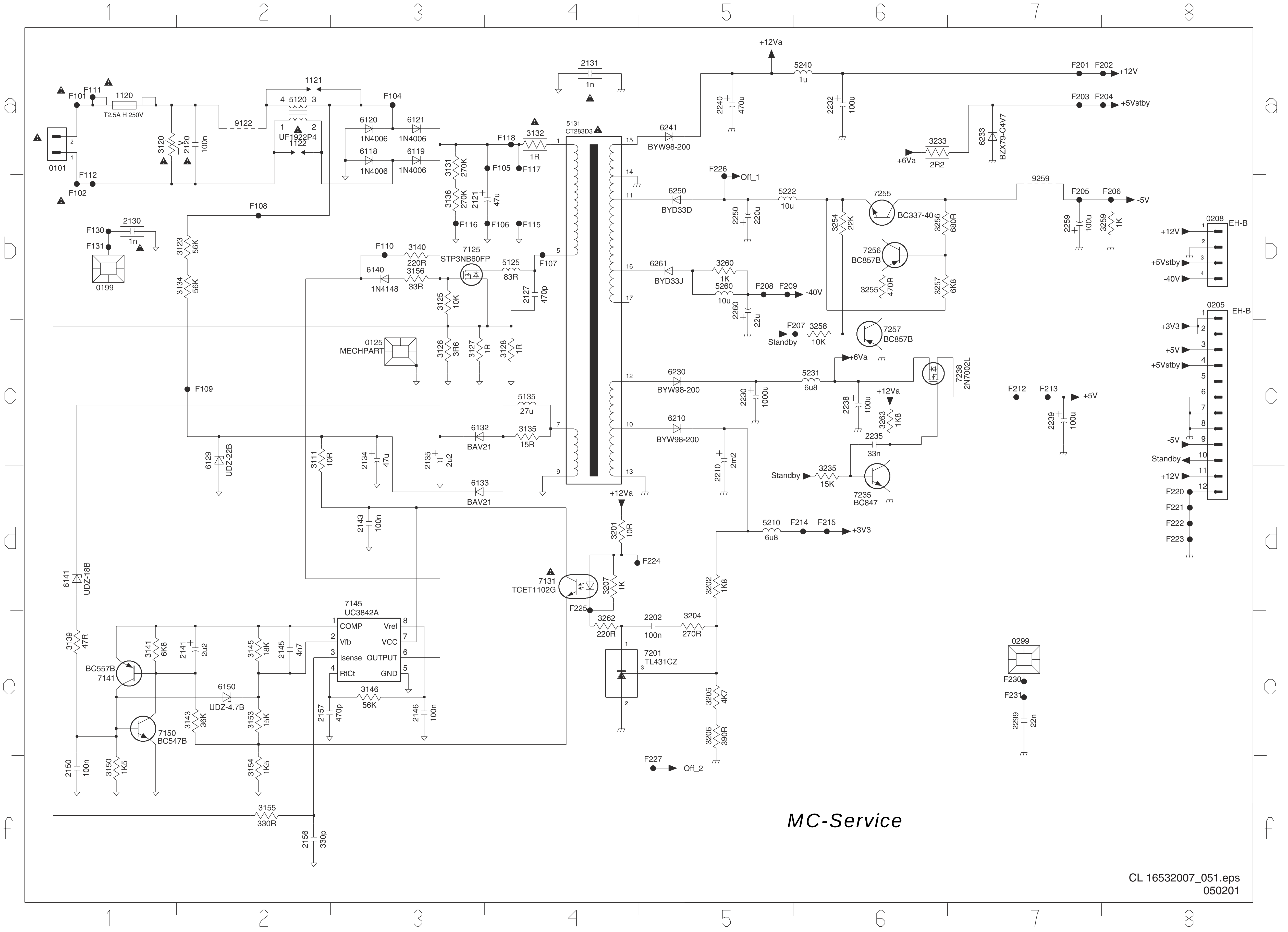
Wiringdiagram


LEAD 2001
STANDBY BOARD
1 +5VSTBY
2 STBLED
3 STBKEY+
4 STBKEY-
1117 EH 1 4
3139 110 38631
100MM
DVD 612 AP
SW BOARD
1 MECH SW
2 MECH SW
1206 EH 1 2
DVD 612/17X
DVD 612/0XX
STANDBY BOARD
1 STBKEY+
2 STBKEY-
1205 EH 1 2
DVD 870 ONLY
STANDBY COMBI BOARD
1 MECH SW
2 MECH SW
3 +5VSTBY
4 STBKEY+
5 STBKEY-
6 AIN12
7 AIN4
8 AIN2
9 AIN1
1201 EH 1 9
DVD 733K ONLY
HEADPHONE/MIC BOARD
1 HP_L
2 MIC GND
3 HP_R
4 +5V
5 MIC_A
6 GND
7 -5V
8 KILL
1200 EH 1 8
A/V BOARD
1 GND
2 ADC_SCLK
3 ADC_LRCLK
4 ADC_DATA
5 ADC_PCMCLK
6 +5V
7 -5V
8 NC
1014 FFC 1 8
1 HP_L
2 MIC GND
3 HP_R
4 +5V
5 MIC_A
6 GND
7 -5V
8 KILL
1013 EH 1 8
1 GND
2 H_SYNC
3 GND
4 PCM_OUT2
5 GND
6 PCM_OUT1
7 -5V
8 SCL
9 +12VSTBY
10 SDA
11 +6VSTBY
12 3V3A
13 GND
14 C
15 GND
16 Y
1000 FFC 16 1
1 P50
2 B (U)
3 G (Y)
4 GND
5 R (V)
6 CVBS
7 GND
8 0|6|12
9 -5V
10 +5VD
11 +5WD
12 KILL
13 GND
14 PCM_OUT0
15 LRCLK
16 SCLK
17 GND
18 PCM_CLK
19 CENTER_ON
20 STEREO_MUTE
21 DIG_OUT
22 GND
1010 FFC 22 1
140MM
3139 110 35151
(DVD 733K ONLY)
3139 110 39161
280MM
3139 110 34231(AP & US)
105MM
3139 110 33841(AP & US)
140MM
3104 157 11201 (EU)
130MM
3104 157 11191 (EU)
130MM
MONO BOARD
PH 1501 5 1
1 SCL
2 GND
3 SCA
4 STBCONTROL
5 P50
FFC 1604 16 1
FFC 1603 22 1
FFC 1507 1 8
1 GND
2 H_SYNC
3 GND
4 PCM_OUT2
5 GND
6 PCM_OUT1
7 -5V
8 SCL
9 +12VSTBY
10 SDA
11 +6VSTBY
12 3V3A
13 GND
14 C
15 GND
16 Y
1 P50
2 B (U)
3 G (Y)
4 GND
5 R (V)
6 CVBS
7 GND
8 0|6|12
9 -5V
10 +5VD
11 +5WD
12 KILL
13 GND
14 PCM_OUT0
15 LRCLK
16 SCLK
17 GND
18 PCM_CLK
19 CENTER_ON
20 STEREO_MUTE
21 DIG_OUT
22 GND
1 GND
2 ADC_SCLK
3 ADC_LRCLK
4 ADC_DATA
5 ADC_PCMCLK
6 +5V
7 -5V
8 NC
1600 PH 12 1
1 3V3
2 3V3
3 +5V
4 +5VSTBY
5 +6VSTBY
6 GND
7 GND
8 GND
9 -5V
10 STBCONTROL
11 +12VSTBY
12 GND
3139 110 34251
280MM
POWER SUPPLY BOARD
1 3V3
2 3V3
3 +5V
4 +5VSTBY
5 +6VSTBY
6 GND
7 GND
8 GND
9 -5V
10 STBCONTROL
11 +12VSTBY
12 GND
1 +12V
2 GND
3 +5VSTBY
4 -40V
5 MECH SW
6 MECH SW
0205 PH 1 12
0207 EH 1 4
3139 110 38681
(EU)
3104 157 02361(SUB LEAD)
280MM
400MM
3103 308 91151 (LEAD)
3139 110 38931(AP)
280MM
DISPLAY BOARD
PH 1118 5 1
1 SCL
2 GND
3 SCA
4 STBCONTROL
5 P50
EH 1115 1 4 6
EH 1117 1 4
1 +5VSTBY
2 STBLED
3 STBKEY+
4 STBKEY-
(LEAD)
EH 1117 1 2
1 STBKEY+
2 STBKEY-
(SUB_LEAD)
EH 1122 1 9
1 MECH SW
2 MECH SW
3 +5VSTBY
4 STBKEY+
5 STBKEY-
6 AIN12
7 AIN4
8 AIN2
9 AIN1
1 +12V
2 GND
3 +5VSTBY
4 -40V
5 MECH SW
6 MECH SW
3139 110 38371
100MM
3139 110 35610
80MM

CL 16532007_037.eps
020201

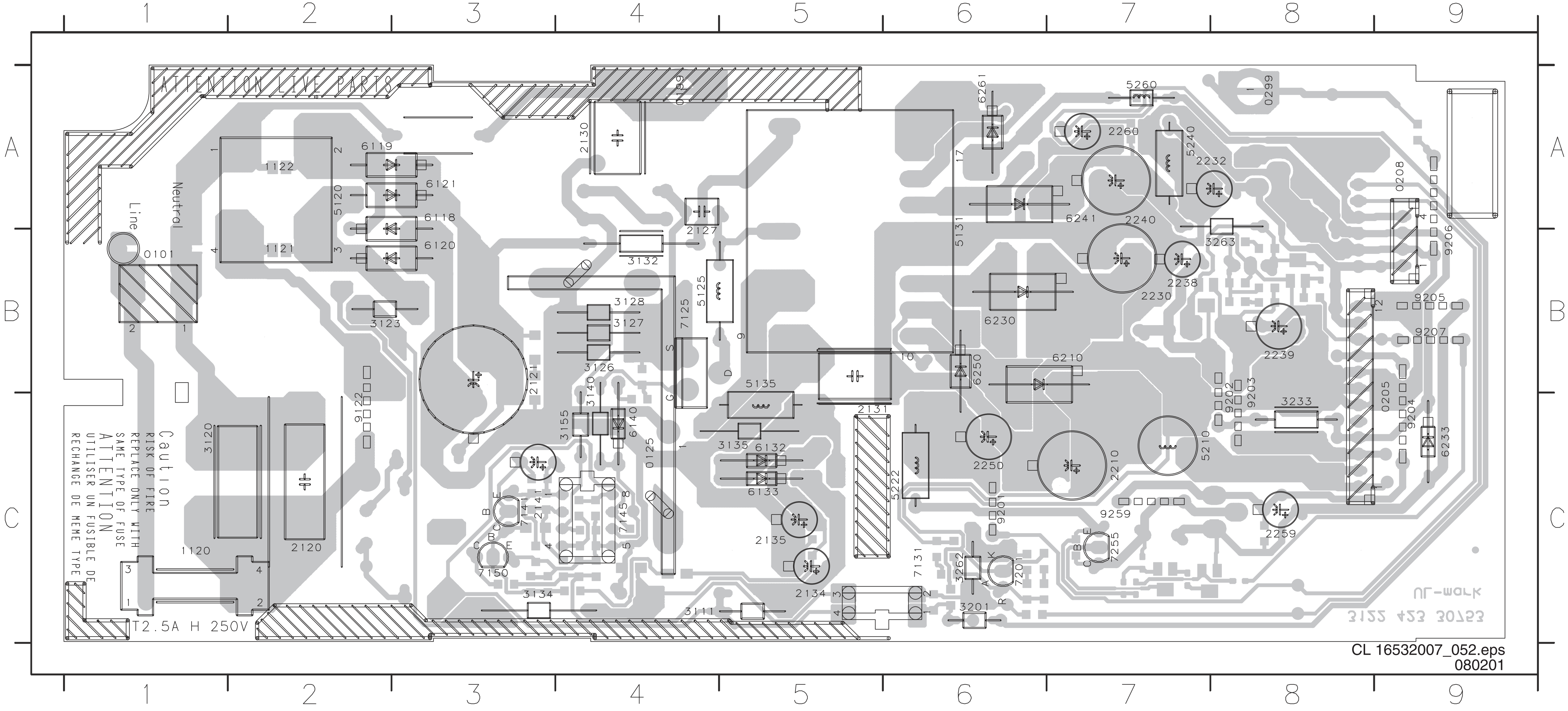
7. Electrical diagrams and Print-layouts

Power Supply Unit VFM EURO (3122 427 22570)


1
2
3
4
5
6
7
8
a
b
c
d
e
f
0101
F101
F111
1120
T2.5A H 250V
F112
F102
3120
2120
100n
9122
1121
4 5120 3
1 2
UF1922P4
1122
F104
6120
6121
1N4006
6118
6119
1N4006
F108
2130
1n
F130
F131
0199
3123
56K
3134
56K
F109
6129
UDZ-22B
6141
UDZ-18B
3139
47R
BC557B
7141
3141
6K8
2141
2u2
6150
UDZ-4.7B
3143
36K
7150
BC547B
2150
100n
3150
1K5
3145
18K
2145
4n7
3153
15K
3154
1K5
3155
330R
2156
330p
7145
UC3842A
COMP
Vref
Vfb
VCC
Isense
OUTPUT
RtCt
GND
3146
56K
2157
470p
2146
100n
3111
10R
2134
47u
2135
2u2
2143
100n
F110
3140
220R
3156
33R
6140
1N4148
7125
STP3NB60FP
5125
83R
F107
2127
470p
3125
10K
0125
MECHPART
3126
3R6
3127
1R
3128
1R
3131
270K
3136
270K
2121
47u
F105
F116
F106
F115
F117
F118
3132
1R
5135
27u
3135
15R
6132
BAV21
6133
BAV21
2131
1n
5131
CT283D3
6241
BYW98-200
+12Va
5240
1u
2240
470u
2232
100u
F201
F202
+12V
F203
F204
+5Vstby
6233
BZX79-C4V7
3233
2R2
+6Va
F226
Off_1
6250
BYD33D
5222
10u
2250
220u
7255
BC337-40
3254
22K
3256
680R
7256
BC857B
3255
470R
3257
6K8
9259
F205
F206
-5V
2259
100u
3259
1K
6261
BYD33J
3260
1K
5260
10u
2260
22u
F208
F209
-40V
F207
3258
10K
Standby
7257
BC857B
6230
BYW98-200
2230
1000u
5231
6u8
2238
100u
3263
1K8
7238
2N7002L
F212
F213
+5V
2239
100u
6210
BYW98-200
2210
2m2
2235
33n
3235
15K
7235
BC847
5210
6u8
F214
F215
+3V3
3201
10R
F224
7131
TCET1102G
3207
1K
F225
3262
220R
2202
100n
3204
270R
3202
1K8
7201
TL431CZ
3205
4K7
3206
390R
F227
Off_2
0208
EH-B
+12V
+5Vstby
-40V
0205
EH-B
+3V3
+5V
+5Vstby
-5V
Standby
+12V
F220
F221
F222
F223
0299
F230
F231
2299
22n
CL 16532007_051.eps
050201

Layout Power Supply Unit VFM EURO (component side)

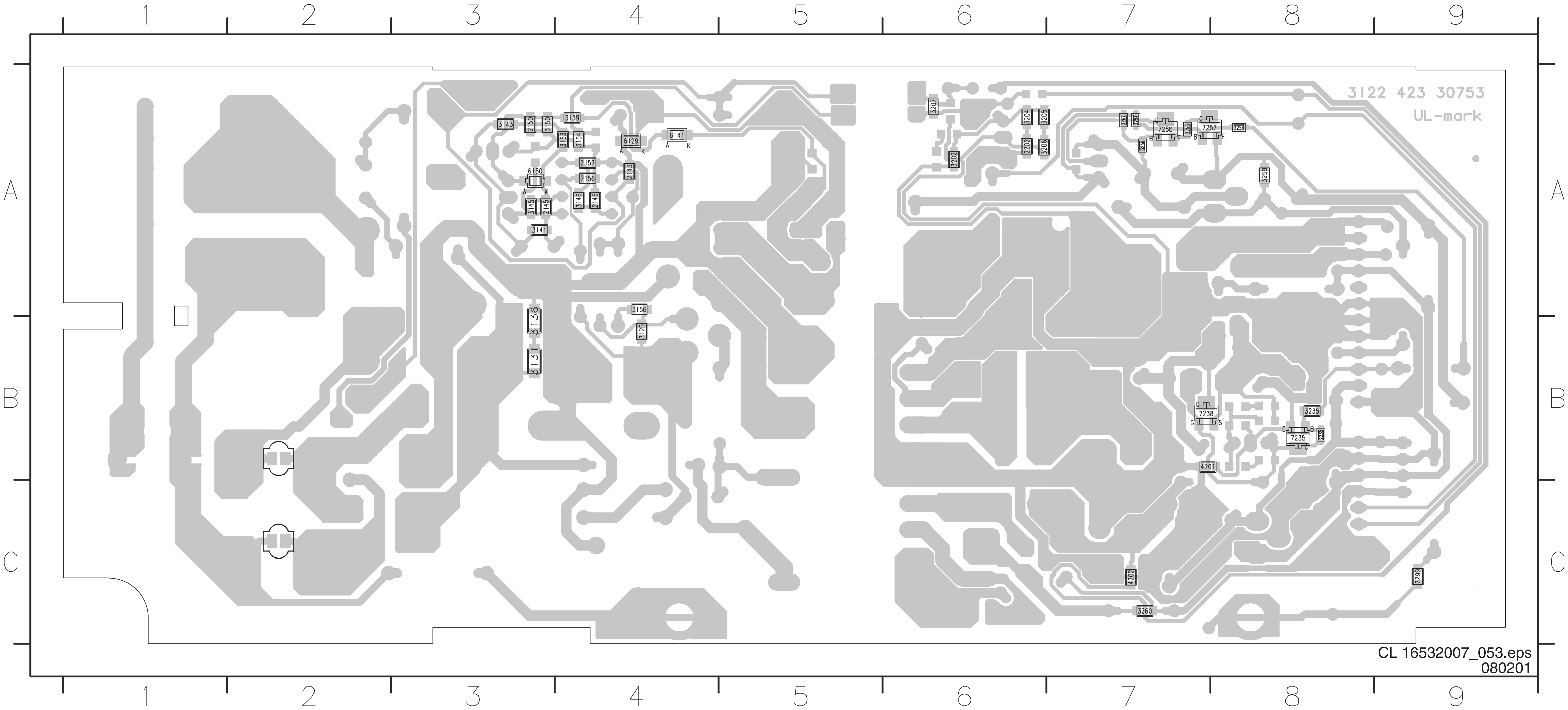
0101	B1
0125	C4
0199	A4
0205	C9
0208	A9
0209	A9
0299	A8
1120	C1
2119	B2
2120	C2
2121	B3
2122	C2
2123	B3
2127	B4
2129	C4
2130	A4
2131	C5
2132	C5
2133	C5
2134	C5
2135	C5
2141	C3
2210	C7
2211	B7
2230	B7
2232	A8
2233	A8
2236	B6
2238	B7
2239	B8
2240	A7
2241	A6
2250	C6
2251	B6
2253	C7
2259	C8
2260	A7
2261	A7
2263	A6
3105	C1
3111	C4
3112	C5
3120	C1
3121	C3
3122	B2
3123	B2
3126	B4
3127	B4
3128	B4
3132	B4
3133	A3
3134	C3
3135	C5
3140	B4
3155	C4
3201	C6
3232	B8
3233	C8
3262	C6
3263	B8
5120	A2
5121	B2
5125	B4
5131	B6
5135	B5
5210	C7
5222	C6
5230	B7
5231	B7
5240	A7
5260	A7
6110	C3
6111	C3
6118	A3
6119	A2
6120	B3
6121	A3
6122	C3
6123	B3
6127	A4
6128	A4
6132	C5
6133	C5
6140	C4
6210	B7
6211	C6
6230	B6
6231	B6
6233	C9
6240	B6
6241	A7
6250	B6
6259	C7
6260	A6
6261	A6
7125	B4
7131	C6
7141	C3
7145	C4
7150	C3
7201	C6
7233	A8
7236	B7
7237	B8
7255	C7
7259	C8
9122	C2
9125	B4
9201	C6
9202	C8
9203	B8
9204	C9
9205	B9
9206	B9
9207	B9
9259	C7


1
2
3
4
5
6
7
8
9
A
B
C
ATTENTION LIVE PARTS
Line
Neutral
0101
1122
1121
5120
6119
6121
6118
6120
3123
3132
3128
3127
3126
2121
3140
3155
6140
0125
2127
5125
7125
2130
0199
5131
5135
3135
6132
6133
2131
2135
2134
5222
3111
3134
7141
2141
7145
7150
9122
3120
2120
1120
T2.5A H 250V
Caution
RISK OF FIRE
REPLACE ONLY WITH
SAME TYPE OF FUSE
ATTENTION
UTILISER UN FUSIBLE DE
RECHANGE DE MEME TYPE
6261
5260
2260
5240
2232
6241
2240
3263
2230
2238
6230
6210
6250
2239
9202
9203
3233
2250
2210
5210
9201
9259
7255
2259
7131
3262
7201
3201
0299
0208
9206
9205
9207
0205
9204
6233
UL-mark
3122 423 30753

CL 16532007_052.eps
080201

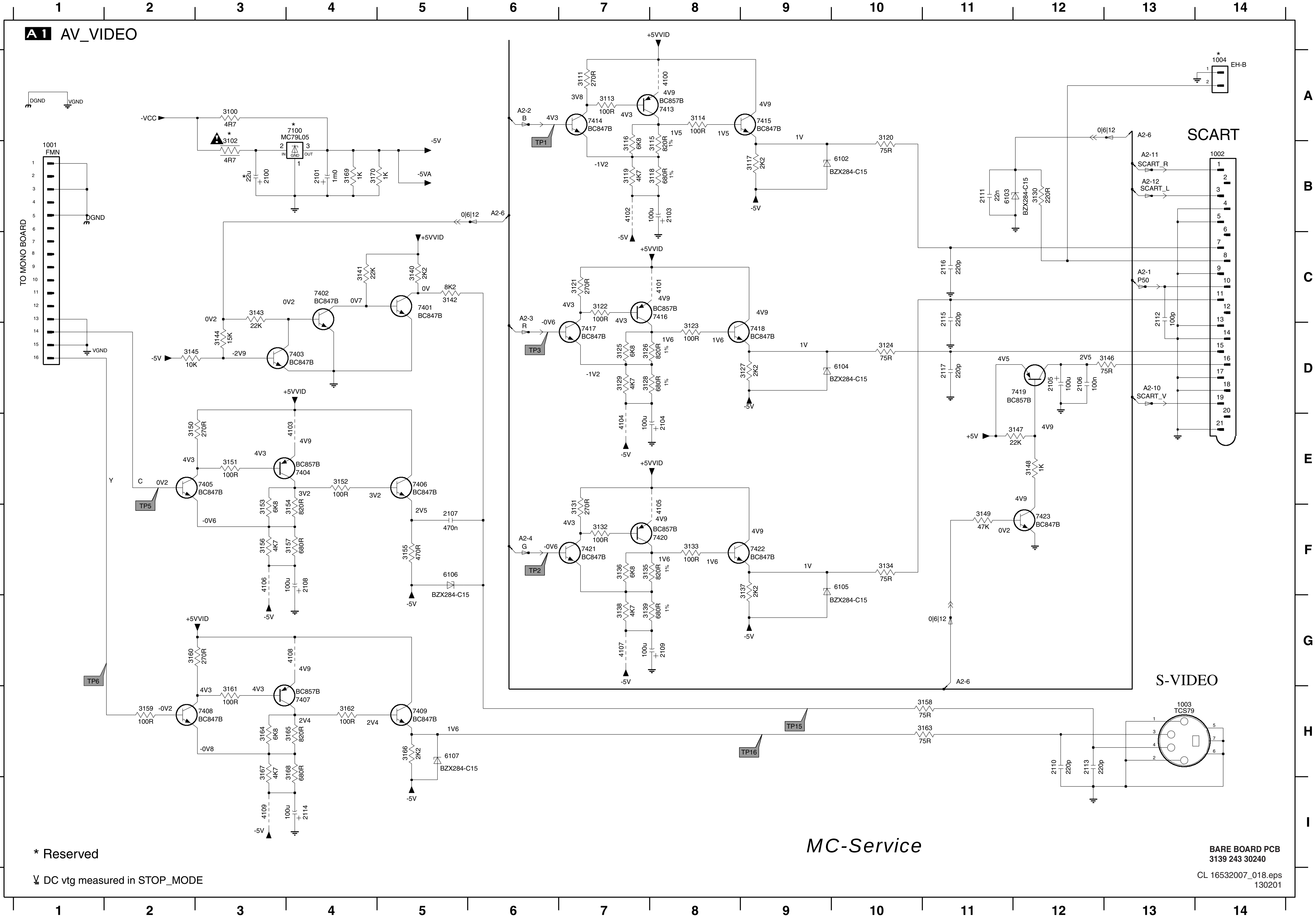
Layout Power Supply Unit VFM EURO (bottom side)

2142	A3	2146	A4	2156	A4	2202	A6	2235	B8	3125	B4	3137	A5	3143	A3	3150	A3	3156	A4	3204	A6	3207	A6	3235	B8	3241	B8	3255	A7	3258	A8	4201	B7	6141	A4	7238	B7
2143	A4	2150	A3	2157	A4	2203	A6	2262	B8	3131	B3	3139	A4	3145	A3	3153	A4	3202	A6	3205	A6	3208	A6	3236	B8	3253	A7	3256	A7	3259	A8	4202	C7	6150	A3	7256	A7
2145	A3	2152	A4	2201	A6	2234	B8	2299	C9	3136	B3	3141	A3	3146	A4	3154	A4	3203	A6	3206	A6	3234	B8	3237	B8	3254	A7	3257	A7	3260	C7	6129	A4	7235	B8	7257	A7


1
2
3
4
5
6
7
8
9
A
B
C
3122 423 30753
UL-mark
3143
2150
3150
3139
3153
3154
6129
6141
2157
6150
2156
2143
3145
2145
3146
2146
3141
3156
3136
3125
3131
3207
3202
3204
3205
2202
3206
7256
7257
3259
3235
7238
7235
4201
4202
3260
2299

CL 16532007_053.eps
080201

A/V Board (Video control & SCART)


A1 AV_VIDEO
SCART
S-VIDEO
TO MONO BOARD
1001 FMN
1002
1003 TCS79
1004 EH-B
DGND
VGND
-VCC
+5VVID
-5V
-5VA
+5V
7100 MC79L05
BC847B
BC857B
BZX284-C15
A2-2 B
A2-3 R
A2-4 G
A2-6
A2-11 SCART_R
A2-12 SCART_L
A2-1 P50
A2-10 SCART_V
0|6|12
TP1
TP2
TP3
TP5
TP6
TP15
TP16
C
Y
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

* Reserved

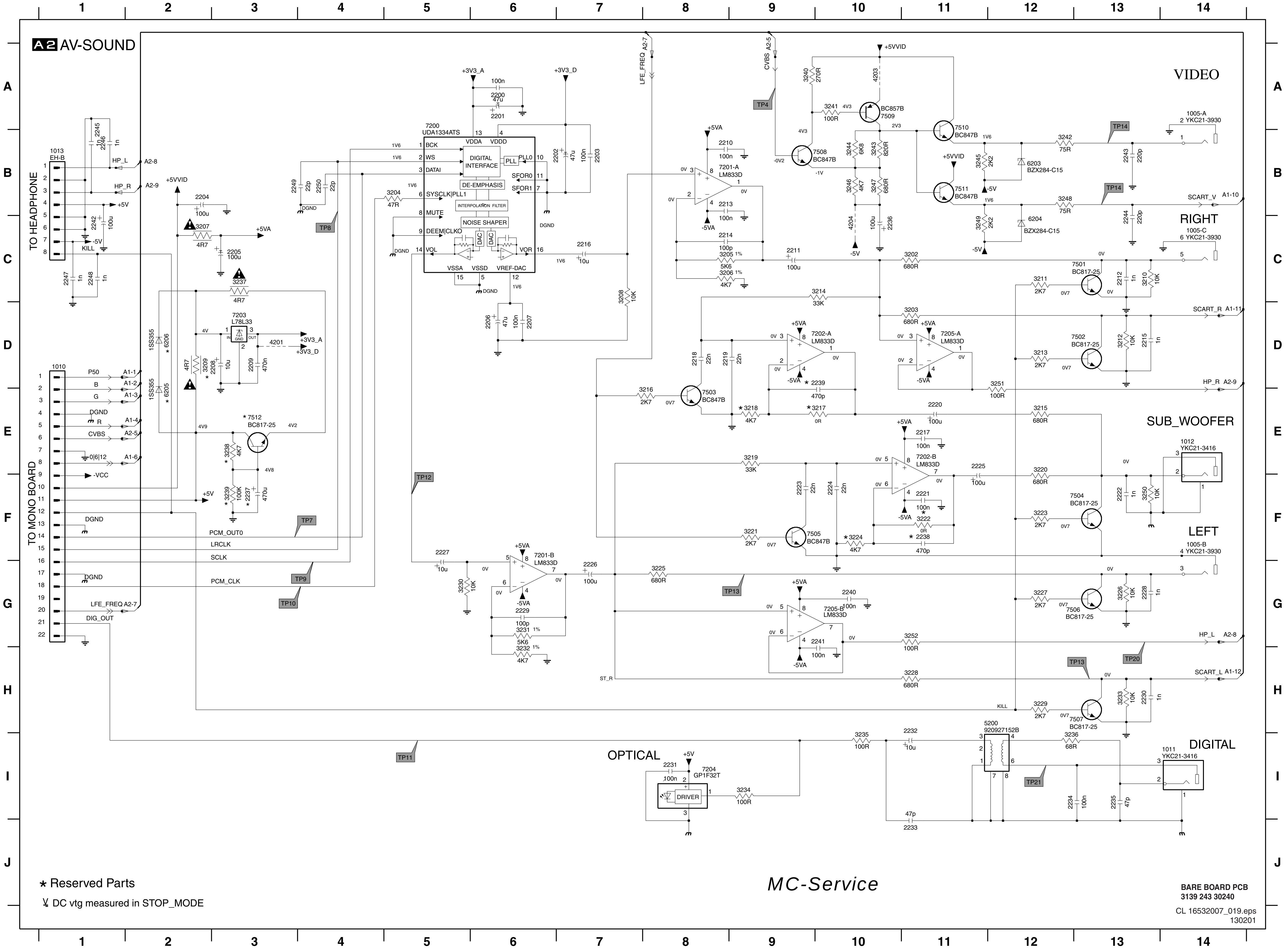
DC vtg measured in STOP_MODE

BARE BOARD PCB
3139 243 30240

CL 16532007_018.eps
130201

1001	B1
1002	B14
1003	H13
1004	A14
2100	B3
2101	B4
2103	B8
2104	E8
2105	D12
2106	D12
2107	F5
2108	F4
2109	G8
2110	H12
2111	B11
2112	C13
2113	H12
2114	I4
2115	C11
2116	C11
2117	D11
3100	A3
3102	B3
3111	A7
3113	A7
3114	A8
3115	B8
3116	B7
3117	B9
3118	B8
3119	B7
3120	A10
3121	C7
3122	C7
3123	D8
3124	D10
3125	D7
3126	D7
3127	D9
3128	D7
3129	D7
3130	B12
3131	F7
3132	F7
3133	F8
3134	F10
3135	F7
3136	F7
3137	F9
3138	G7
3139	G7
3140	C5
3141	C4
3142	C5
3143	C3
3144	D3
3145	D2
3146	D13
3147	E12
3148	E12
3149	F11
3150	E2
3151	E3
3152	E4
3153	F3
3154	F4
3155	F5
3156	F3
3157	F4
3158	H11
3159	H2
3160	G2
3161	H3
3162	H4
3163	H11
3164	H3
3165	H4
3166	H5
3167	H3
3168	H4
3169	B4
3170	B4
4100	A8
4101	C8
4102	B7
4103	E4
4104	E7
4105	F8
4106	F3
4107	G7
4108	G4
4109	I3
6102	B10
6103	B11
6104	D10
6105	F10
6106	F5
6107	H5
7100	A4
7401	C5
7402	C4
7403	D4
7404	E4
7405	E3
7406	E5
7407	H4
7408	H3
7409	H5
7413	A8
7414	A7
7415	A9
7416	C8
7417	D7
7418	D9
7419	D11
7420	F8
7421	F7
7422	F9
7423	F12

A/V Board (Sound)


A2 AV-SOUND
VIDEO
RIGHT
SUB_WOOFER
LEFT
DIGITAL
OPTICAL
TO HEADPHONE
TO MONO BOARD
1013 EH-B
1010
7200 UDA1334ATS
DIGITAL INTERFACE
PLL
DE-EMPHASIS
INTERPOLATION FILTER
NOISE SHAPER
DAC
BCK
WS
DATAI
SYSCLK|PLL1
MUTE
DEEM|CLKO
VOL
VOR
VDDA
VDDD
VSSA
VSSD
VREF-DAC
PLL0
SFOR0
SFOR1
7201-A LM833D
7201-B LM833D
7202-A LM833D
7202-B LM833D
7205-A LM833D
7205-B LM833D
7203 L78L33
7204 GP1F32T
DRIVER
5200 920927152B
7508 BC847B
7509 BC857B
7510 BC847B
7511 BC847B
7503 BC847B
7505 BC847B
7512 BC817-25
7501 BC817-25
7502 BC817-25
7504 BC817-25
7506 BC817-25
7507 BC817-25
6203 BZX284-C15
6204 BZX284-C15
1SS355
1005-A 2 YKC21-3930
1005-B 4 YKC21-3930
1005-C 6 YKC21-3930
1012 YKC21-3416
1011 YKC21-3416
+5VVID
+5VA
-5VA
+3V3_A
+3V3_D
+5V
-5V
-VCC
DGND
KILL
HP_L
HP_R
P50
B
G
R
CVBS
PCM_OUT0
LRCLK
SCLK
PCM_CLK
LFE_FREQ
DIG_OUT
SCART_V
SCART_R
SCART_L
ST_R
TP4
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
TP20
TP21

★ Reserved Parts

DC vtg measured in STOP_MODE

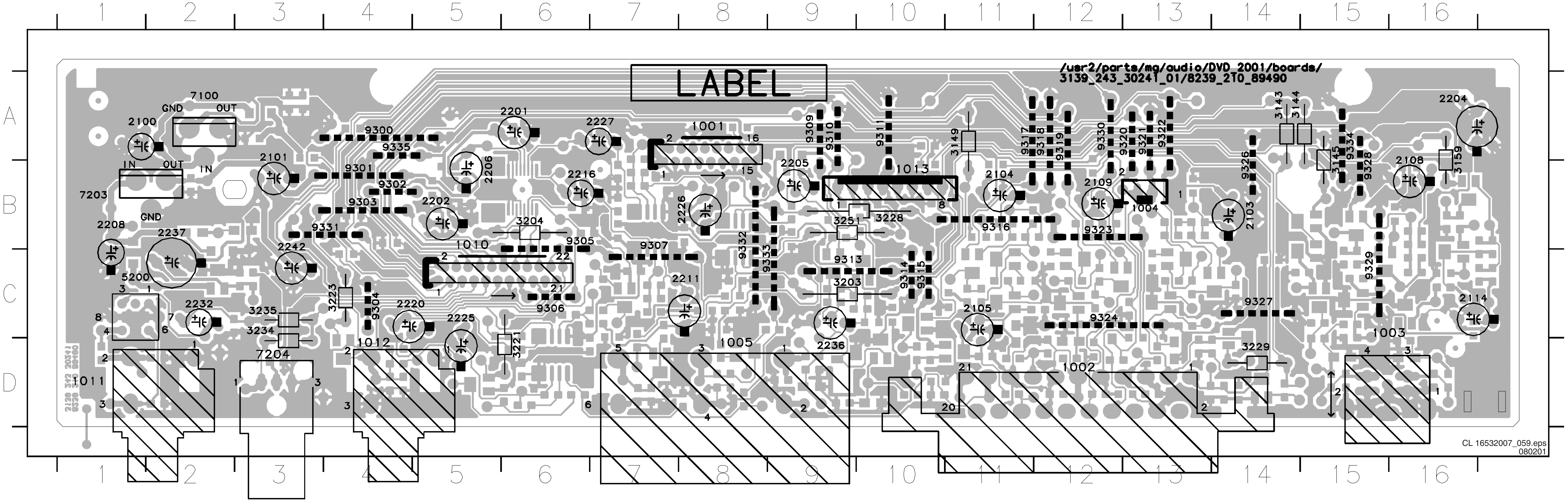
BARE BOARD PCB
3139 243 30240

CL 16532007_019.eps
130201

1005-A	A14
1005-B	F14
1005-C	C14
1010	D1
1011	I14
1012	E14
1013	B1
2200	A6
2201	A6
2202	B7
2203	B7
2204	B2
2205	C3
2206	D6
2207	D6
2208	D3
2209	D3
2210	B8
2211	C9
2212	C13
2213	B8
2214	C8
2215	D13
2216	C7
2217	E11
2218	D8
2219	D8
2220	E11
2221	F11
2222	F13
2223	F9
2224	F10
2225	E11
2226	G7
2227	F5
2228	G13
2229	G6
2230	H13
2231	I8
2232	H11
2233	J11
2234	I12
2235	I13
2236	C10
2237	F3
2238	F11
2239	D10
2240	G10
2241	G10
2242	C1
2243	B13
2244	C13
2245	B1
2246	B1
2247	C1
2248	C1
2249	B3
2250	B4
3202	C11
3203	D11
3204	B5
3205	C8
3206	C8
3207	C2
3208	C7
3209	D2
3210	C13
3211	C12
3212	D13
3213	D12
3214	C10
3215	E12
3216	E8
3217	E10
3218	E9
3219	E9
3220	E12
3221	F9
3222	F11
3223	F12
3224	F10
3225	G8
3226	G13
3227	G12
3228	H11
3229	H12
3230	G5
3231	G6
3232	H6
3233	H13
3234	I9
3235	I10
3236	I12
3237	C3
3238	E3
3239	F3
3240	A9
3241	A10
3242	B12
3243	B10
3244	B10
3245	B11
3246	B10
3247	B10
3248	B12
3249	C11
3250	F13
3251	D12
3252	G11
4201	D3
4203	A10
4204	C10
5200	H11
6203	B12
6204	C12
6205	E2
6206	D2
7200	A5
7201-A	B8
7201-B	F6
7202-A	D9
7202-B	E11
7203	D3
7204	I8
7205-A	D11

Layout A/V Board (component side)

1001	A8
1002	D12
1003	C15
1004	B13
1005	D8
1010	B5
1011	D1
1012	D4
1013	B10
2100	A1
2101	A3
2103	B14
2104	B11
2105	C11
2108	A16
2109	B12
2114	C16
2201	A6
2202	B5
2204	A16
2205	B9
2206	B5
2208	B1
2211	C8
2216	B6
2220	C4
2225	C5
2226	B8
2227	A7
2232	C2
2236	D9
2237	B2
2242	B3
3143	A14
3144	A14
3145	A15
3149	A11
3159	A16
3203	C9
3204	B6
3221	D6
3223	C4
3228	B10
3229	D14
3234	C3
3235	C3
3251	B9
5200	C1
7100	A2
7203	B1
7204	D3
9300	A4
9301	B4
9302	B4
9303	B4
9304	C4
9305	B6
9306	C6
9307	B7
9309	A9
9310	A9
9311	A10
9313	C9
9314	C10
9315	C10
9316	B11
9317	A11
9318	A12
9319	A12
9320	A13
9321	A13
9322	A13
9323	B12
9324	C12
9326	B14
9327	C14
9328	B15
9329	C15
9330	A12
9331	B4
9332	B8
9333	C8
9334	A15
9335	A4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16
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B
C
D
LABEL
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GND
OUT
IN
7203
2100
2101
2208
2237
5200
2232
2242
3235
3234
7204
1011
1012
9300
9335
9301
9302
9303
9331
2206
2202
2201
2227
2216
3204
1010
9305
9306
9304
3223
2220
2225
3221
1001
9307
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1005
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9310
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1004
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2105
9324
1002
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9326
3143
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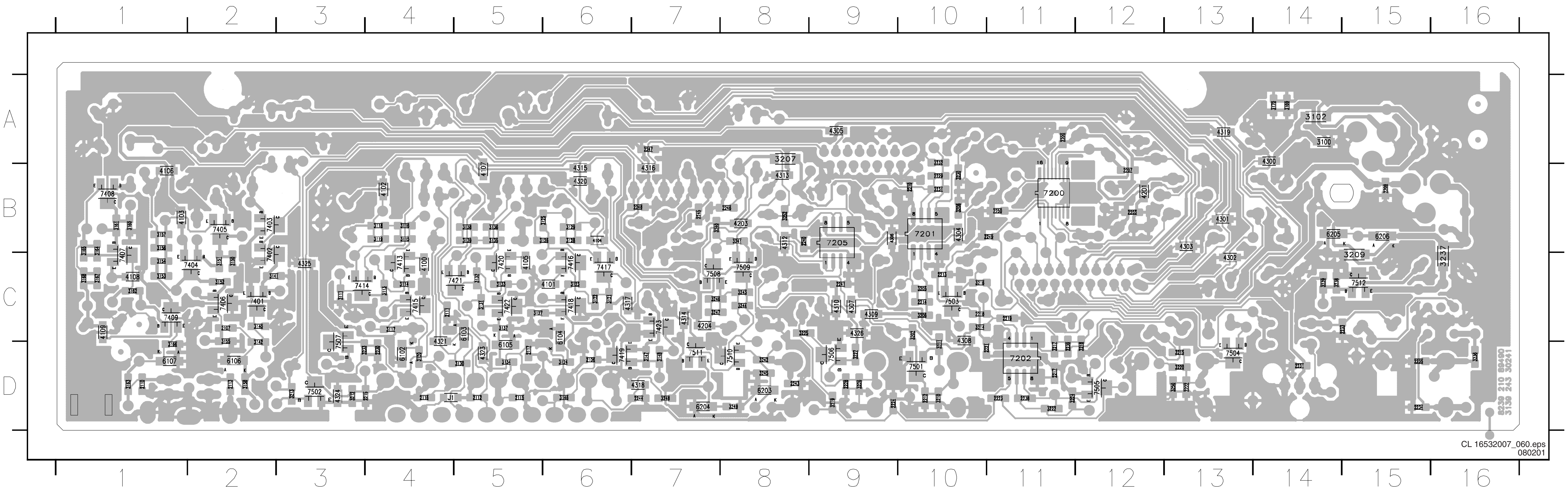
3145
9334
9328
9327
3229
9329
1003
2108
3159
2204
2114

CL 16532007_059.eps
080201

A/V Board (bottom side)

J1	D4
2106	D6
2107	C2
2110	D1
2111	C4
2112	D5
2113	D2
2115	D5
2116	D4
2117	D5
2200	A11
2203	B12
2207	B12
2209	B15
2210	B10
2212	D10
2213	C10
2214	C10
2215	D4
2217	D11
2218	C10
2219	C11
2221	D10
2222	D13
2223	D11
2224	D9
2228	D9
2229	B10
2230	D4
2231	D14
2233	C15
2234	D15
2235	D15
2238	D11
2239	D11
2240	B8
2241	C9
2243	D8
2244	D7
2245	B7
2246	B8
2247	A7
2248	B7
2249	B11
2250	B11
3100	A14
3102	A14
3111	C3
3113	C4
3114	C4
3115	B4
3116	B4
3117	C4
3118	B4
3119	B4
3120	D4
3121	C6
3122	C6
3123	C6
3124	D6
3125	B6
3126	B6
3127	C5
3128	B6
3129	B6
3130	D5
3131	C5
3132	C5
3133	C5
3134	D5
3135	B5
3136	B5
3137	C5
3138	B5
3139	B5
3140	C2
3141	C2
3142	D2
3146	D6
3147	D7
3148	D7
3150	C2
3151	C2
3152	C2
3153	C1
3154	C1
3155	C2
3156	B1
3157	B1
3158	D2
3160	B1
3161	B1
3162	C1
3163	D1
3164	B1
3165	B1
3166	D1
3167	C1
3168	C1
3169	A14
3170	A14
3202	C10
3205	C10
3206	C10
3207	A8
3208	B10
3209	C15
3210	D10
3211	D10
3212	D3
3213	D3
3214	C10
3215	D13
3216	C10
3217	D11
3218	D12
3219	D9
3220	D13
3222	D11
3224	D11
3225	C8
3226	D9
3227	D9
3230	B10
3231	B10
3232	A10
3233	D3
3236	D16
3237	C16
3238	C14
3239	C14
3240	B7
3241	B8
3242	D8
3243	C8
3244	C8
3245	D8
3246	C7
3247	C7
3248	D7
3249	D8
3250	D13
3252	B8
4100	C4
4101	C6
4102	B4
4103	B1
4104	B6
4105	C5
4106	B1
4107	B5
4108	C1
4109	C1
4201	B12
4203	B8
4204	C7
4300	A14
4301	B13
4302	C13
4303	B13
4304	B10
4305	A9
4306	B9
4307	C9
4308	C10
4309	C9
4310	C9
4312	B8
4313	B8
4314	C7
4315	B6
4316	B7
4317	C6
4318	D7
4319	A13
4320	B6
4321	C4
4323	D5
4324	D3
4325	C3
4326	C9
6102	D4
6103	C5
6104	C6
6105	D5
6106	D2
6107	D1
6203	D8
6204	D7
6205	B14
6206	B15
7200	B11
7201	B10
7202	D11
7205	B9
7401	C2
7402	C2
7403	B2
7404	C2
7405	B2
7406	C2
7407	C1
7408	B1
7409	C1
7413	C4
7414	C3
7415	C4
7416	C6
7417	C6
7418	C6
7419	D6
7420	C5
7421	C5
7422	C5
7423	C7
7501	D10
7502	D3
7503	C10
7504	D13
7505	D12
7506	D9
7507	D3
7508	C7
7509	C8
7510	D8
7511	D7
7512	C15



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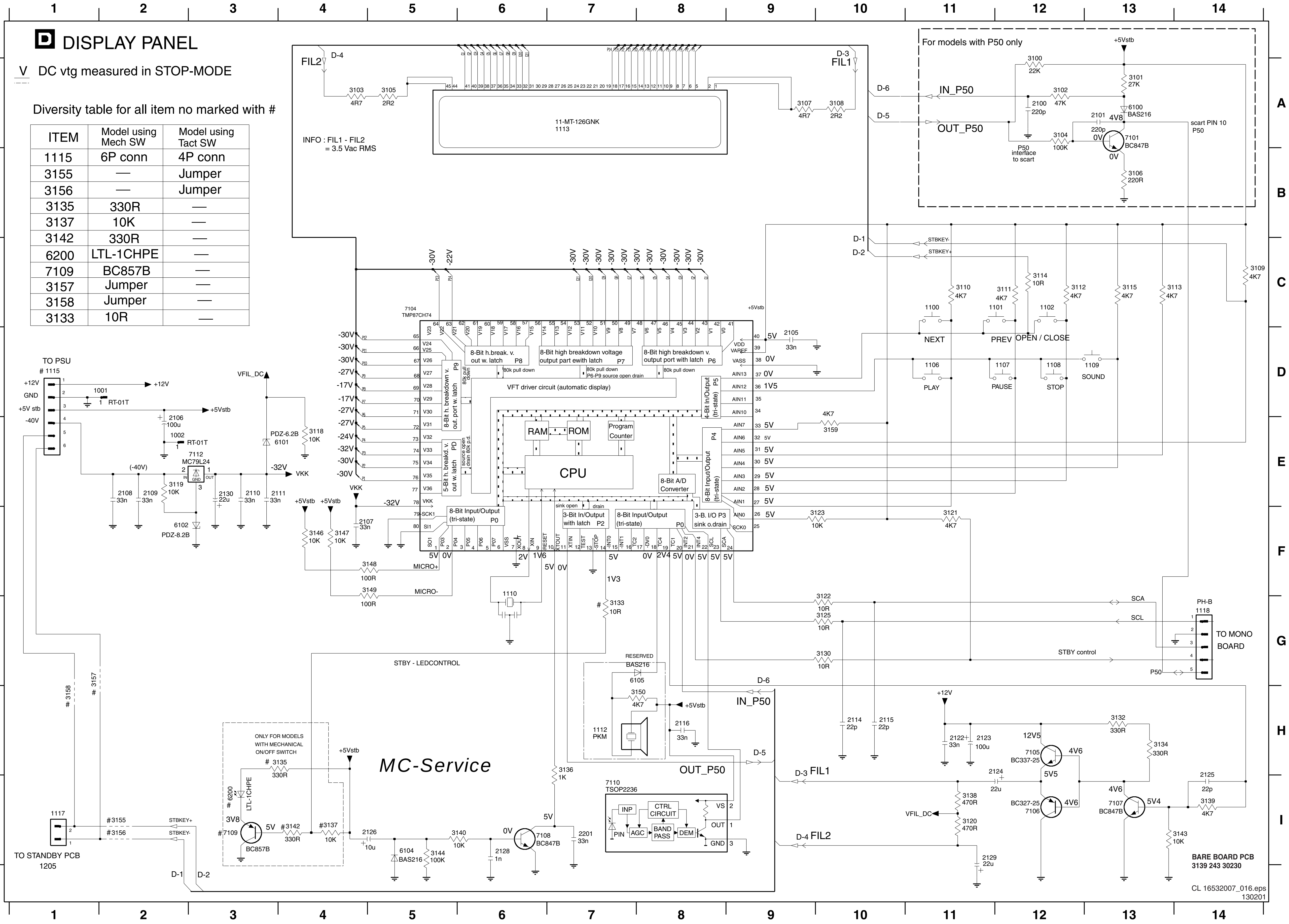
080201

Display board


D DISPLAY PANEL
V DC vtg measured in STOP-MODE
INFO : FIL1 - FIL2 = 3.5 Vac RMS
11-MT-126GNK 1113
For models with P50 only
IN_P50
OUT_P50
P50 interface to scart
scart PIN 10 P50
7104 TMP87CH74
RAM
ROM
Program Counter
CPU
8-Bit A/D Converter
VFT driver circuit (automatic display)
8-Bit h.break. v. out w. latch P8
8-bit high breakdown voltage output part ewith latch P7
8-Bit high breakdown v. output port with latch P6
8-Bit Input/Output (tri-state) P0
3-Bit In/Output with latch P2
3-B. I/O P3 sink o.drain
TO PSU # 1115
+12V
GND
+5V stb
-40V
7112 MC79L24
VFIL_DC
PDZ-6.2B 6101
PDZ-8.2B 6102
VKK
MICRO+
MICRO-
1110
NEXT
PREV
OPEN / CLOSE
PLAY
PAUSE
STOP
SOUND
STBKEY-
STBKEY+
SCA
SCL
STBY control
PH-B 1118
TO MONO BOARD
STBY - LEDCONTROL
RESERVED BAS216 6105
1112 PKM
7110 TSOP2236
INP
CTRL CIRCUIT
AGC
BAND PASS
DEM
PIN
VS
OUT
GND
ONLY FOR MODELS WITH MECHANICAL ON/OFF SWITCH
LTL-1CHPE
BC857B
7108 BC847B
7105 BC337-25
7106 BC327-25
7107 BC847B
MC-Service
TO STANDBY PCB 1205
D-1
D-2
D-3 FIL1
D-4 FIL2
D-5
D-6
BARE BOARD PCB 3139 243 30230
CL 16532007_016.eps 130201

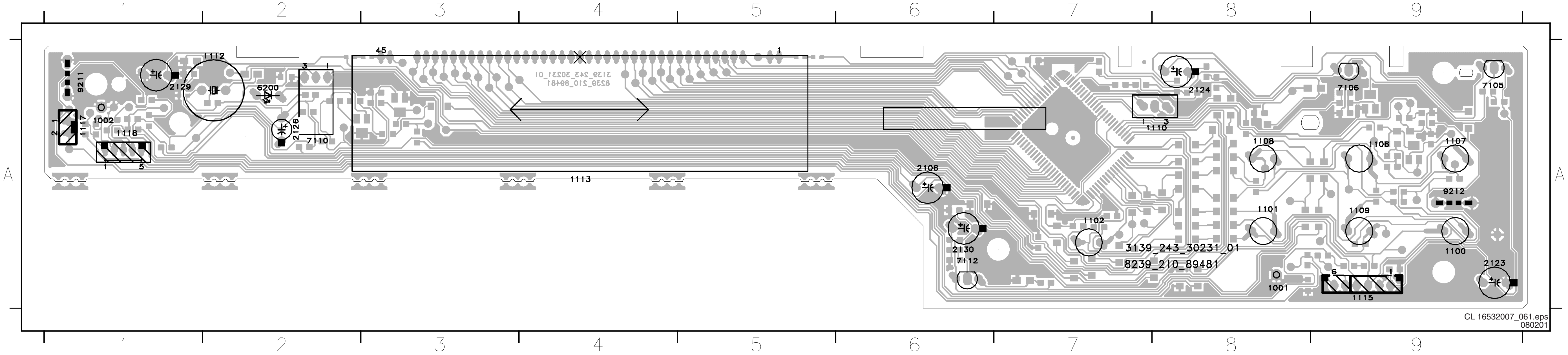
Diversity table for all item no marked with #

ITEM	Model using Mech SW	Model using Tact SW
1115	6P conn	4P conn
3155	—	Jumper
3156	—	Jumper
3135	330R	—
3137	10K	—
3142	330R	—
6200	LTL-1CHPE	—
7109	BC857B	—
3157	Jumper	—
3158	Jumper	—
3133	10R	—

1001	D2
1002	E2
1100	C11
1101	C12
1102	C12
1106	D11
1107	D12
1108	D12
1109	D13
1110	F6
1112	H7
1113	A7
1115	D1
1117	I1
1118	G14
2100	A12
2101	A13
2105	D9
2106	E2
2107	F4
2108	E2
2109	E2
2110	E3
2111	E4
2114	H10
2115	H10
2116	H8
2122	H11
2123	H11
2124	H12
2125	I14
2126	I5
2128	I6
2129	I11
2130	E3
2201	I7
3100	A12
3101	A13
3102	A12
3103	A4
3104	A12
3105	A5
3106	B13
3107	A9
3108	A10
3109	C14
3110	C11
3111	C12
3112	C12
3113	C14
3114	C12
3115	C13
3118	E4
3119	E2
3120	I11
3121	F11
3122	G10
3123	F10
3125	G10
3130	G10
3132	H13
3133	G7
3134	H13
3135	H4
3136	H7
3137	I4
3138	I11
3139	I14
3140	I6
3142	I4
3143	I14
3144	I5
3146	F4
3147	F4
3148	F5
3149	F5
3150	H8
3155	I2
3156	I2
3157	G1
3158	H1
3159	E10
6100	A13
6101	E4
6102	F2
6104	I5
6105	G8
6200	I3
7101	A13
7104	C5
7105	H12
7106	I12
7107	I13
7108	I6
7109	I3
7110	I7
7112	E3
F102	D5
F103	D5
F108	A5
F109	A9
F119	C7
F120	C7
F121	C7
F122	C8
F123	C8
F124	C8
F125	C5
F129	C7
F130	C7
F131	C7
F132	C8
F133	C8
F137	D5
F138	D5
F139	D5
F140	H8
F141	D5
F142	D9
F143	A12
F144	A12
F145	G8
F146	D3
F147	E3
F148	D1
F149	D5
F150	E5
F151	E5
F152	E9
F153	C5
F154	E5
F155	E9
F156	E5
F157	E9
F158	E5
F159	E9
F160	E9
F161	E9
F162	I6
F163	I7
F164	H6
F165	A13
F166	B12
F167	B13
F168	F1
F169	F1
F183	I1
F186	E9
F203	D2
F205	E1
F208	G13
F209	G13
F210	G13
F228	D1
F233	D9
F235	I1
F241	G14
F242	G13

Layout Display Board (component side)

1001	A8	1100	A9	1102	A7	1107	A9	1109	A9	1112	A2	1115	A9	1118	A1	2123	A9	2126	A2	2130	A6	7105	A9	7110	A2	9211	A1
1002	A1	1101	A8	1106	A9	1108	A8	1110	A8	1113	A4	1117	A1	2106	A6	2124	A8	2129	A1	6200	A2	7106	A9	7112	A6	9212	A9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1002
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7110
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1113
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8239_210_89481
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1102
1110
2124
7106
7105
1108
1106
1107
9212
1101
1109
1100
1001
1115
2123
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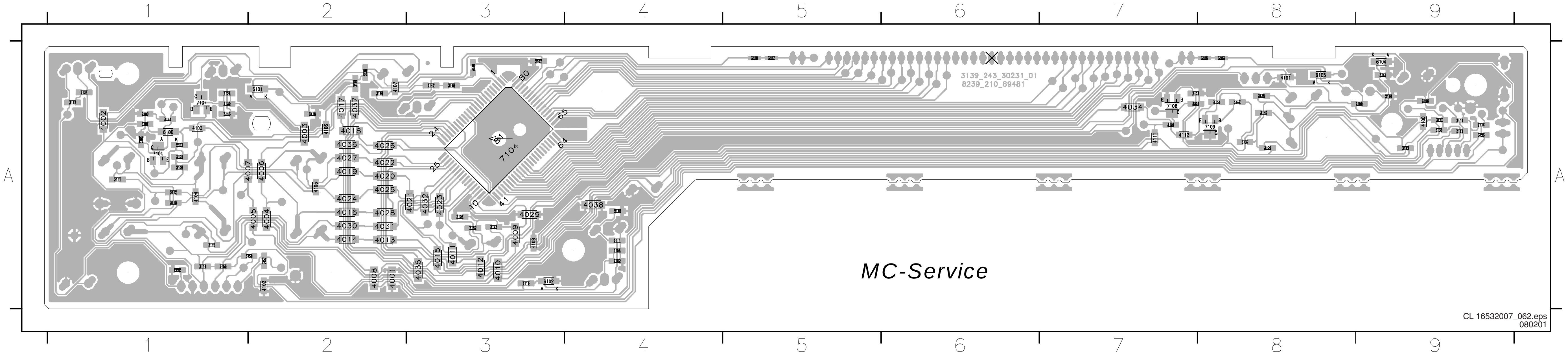
080201

Layout Display Board (bottom side)

2100	A1	2109	A4	2116	A9	3100	A1	3105	A8	3110	A1	3115	A1	3122	A9	3133	A8	3138	A2	3144	A9	3150	A9	3159	A3	4005	A2	4010	A3	4015	A3	4020	A2	4025	A2	4030	A2	4036	A2	4102	A2	4107	A2	6101	A2	7104	A3
2101	A1	2110	A4	2122	A1	3101	A1	3106	A1	3111	A1	3118	A2	3123	A3	3134	A1	3139	A1	3146	A2	3155	A1	4001	A2	4006	A2	4011	A3	4016	A2	4021	A3	4026	A2	4031	A2	4037	A2	4103	A1	4108	A3	6102	A3	7107	A1
2105	A3	2111	A4	2125	A1	3102	A1	3107	A5	3112	A1	3119	A3	3125	A9	3135	A8	3140	A8	3147	A3	3156	A9	4002	A1	4007	A1	4012	A3	4017	A2	4022	A2	4027	A2	4032	A3	4038	A4	4104	A1	4111	A7	6104	A9	7108	A7
2107	A3	2114	A9	2128	A7	3103	A8	3108	A5	3113	A9	3120	A2	3130	A9	3136	A7	3142	A8	3148	A3	3157	A2	4003	A2	4008	A2	4013	A2	4018	A2	4023	A3	4028	A2	4034	A7	4100	A9	4105	A2	4112	A7	6105	A8	7109	A8
2108	A4	2115	A9	2201	A7	3104	A1	3109	A8	3114	A1	3121	A9	3132	A1	3137	A8	3143	A1	3149	A3	3158	A2	4004	A2	4009	A3	4014	A2	4019	A2	4024	A2	4029	A3	4035	A3	4101	A8	4106	A2	6100	A1	7101	A1		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4008
4001
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7104
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3139_243_30231_01
8239_210_89481

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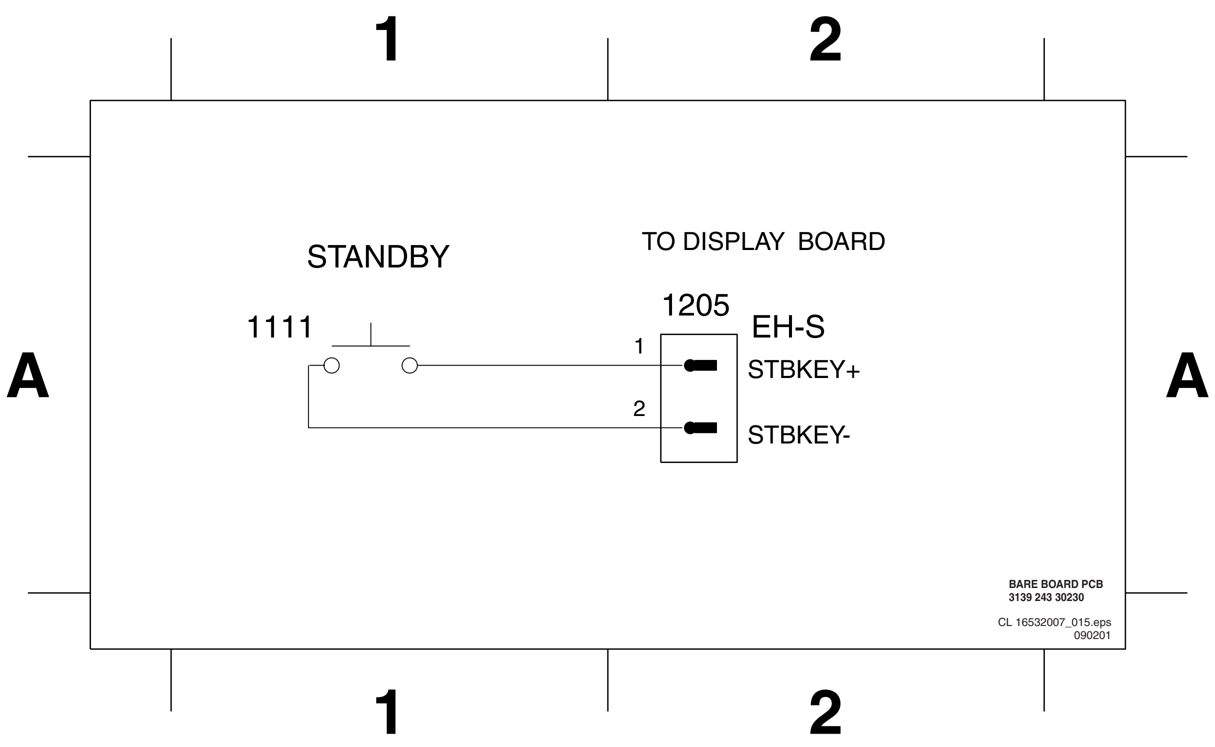
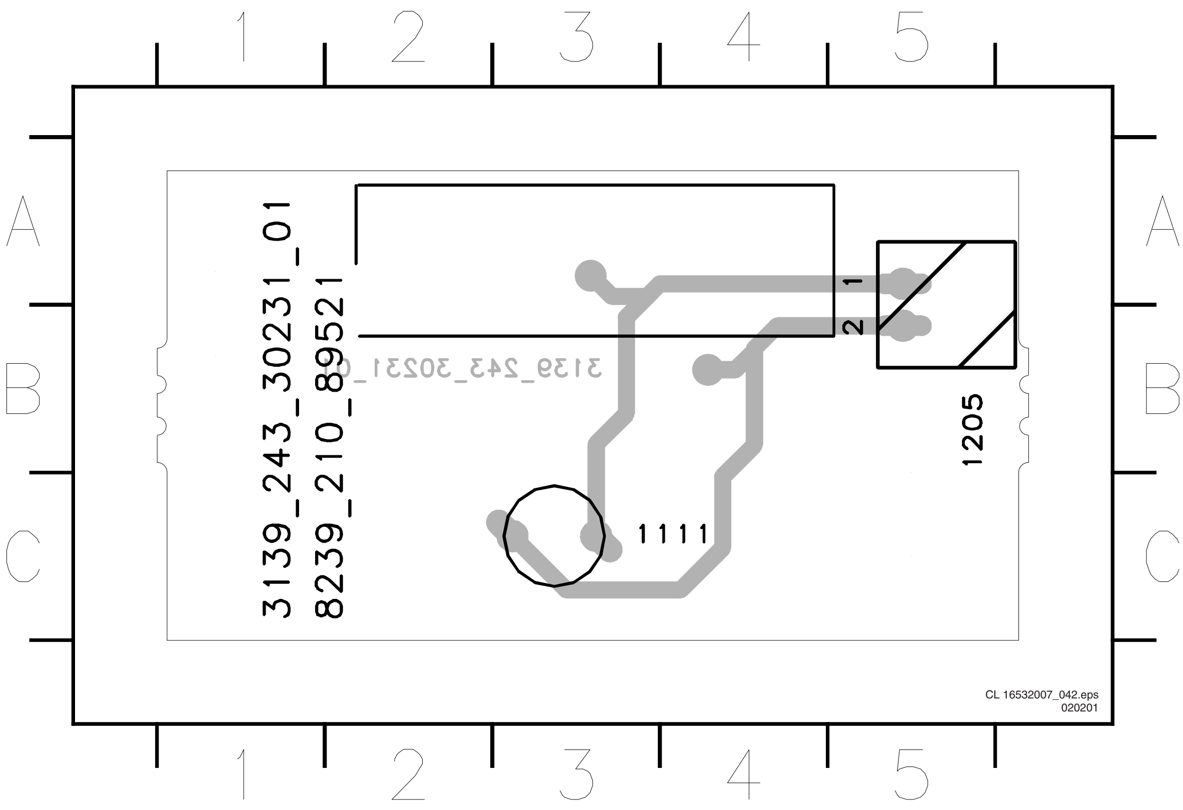
080201

Bare board Standby


1
2
A
STANDBY
TO DISPLAY BOARD
1111
1205
EH-S
1
2
STBKEY+
STBKEY-
BARE BOARD PCB
3139 243 30230
CL 16532007_015.eps
090201

1111 A1
1205 A2
F253 A1
F254 A1

Layout Bare board Standby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4
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A
B
C
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8239_210_89521
3139_243_30231_01
1
2
1205
1111
CL 16532007_042.eps
020201

1111 C4
1205 B5

8. Alignments

No electrical alignments available

9. Circuit descriptions and list of abbreviations

9.1 Current mode Power Supply

9.1.1 Introduction

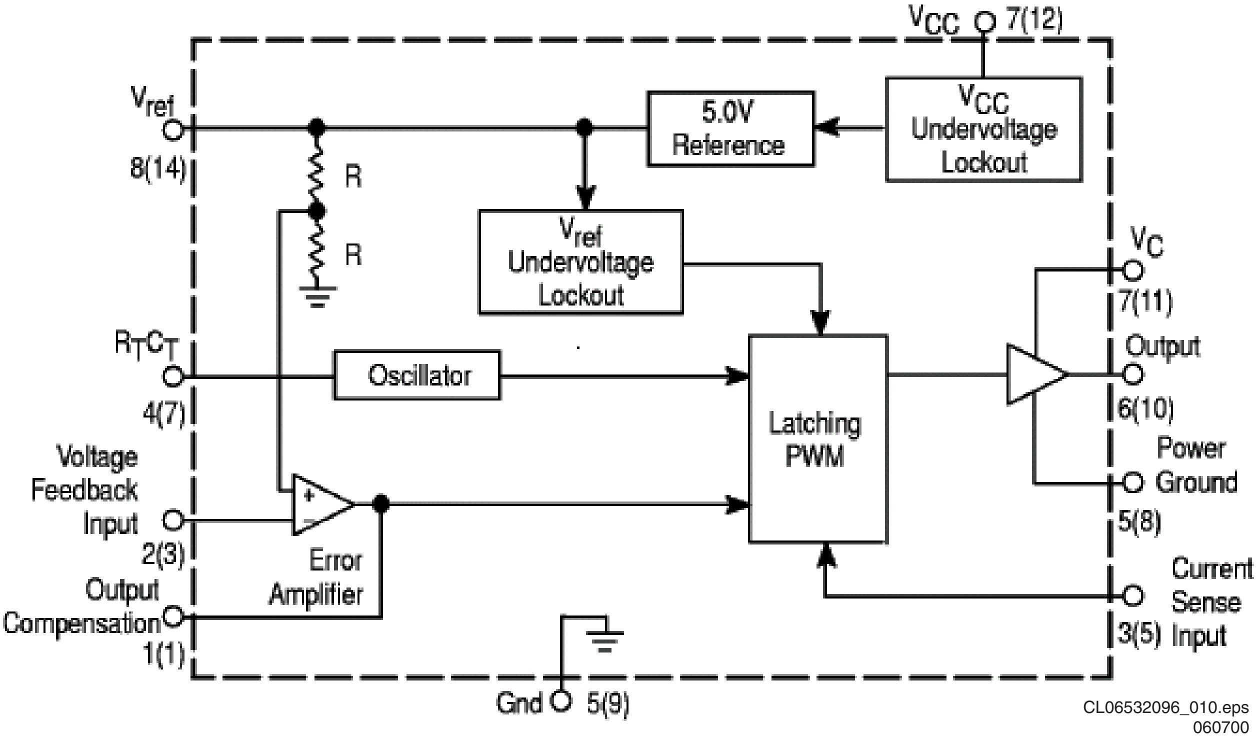
The switch mode power supply (SMPS) is mains isolated. The control IC 7145 (UC 3842A) produces pulses to drive the power switch, Mosfet 7125.
Power supply regulation is achieved by using duty cycle control at fix frequency ,of approximately 58KHz ,determined by the RC timing components.

9.1.2 General Description of UC 3842A

The UC 3842 is a high performance fixed frequency current mode controller that is specifically designed for off-line and DC-to-DC converter application. This integrated circuit feature a trimmed oscillator for precise duty cycle control, a temperature compensated reference, high gain error amplifier, current sensing comparator and a high current totem pole output ideally suited for driving a power MOSFET. Also included are protective features consisting of input and reference undervoltage lockouts each with hysteresis, cycle by cycle current limiting, programmable output deadtime and a latch for single pulse metering.

A representative Block diagram and Pin function description is shown in Fig 1 and Fig 2 respectively.

9.1.3 BLOCK DIAGRAM

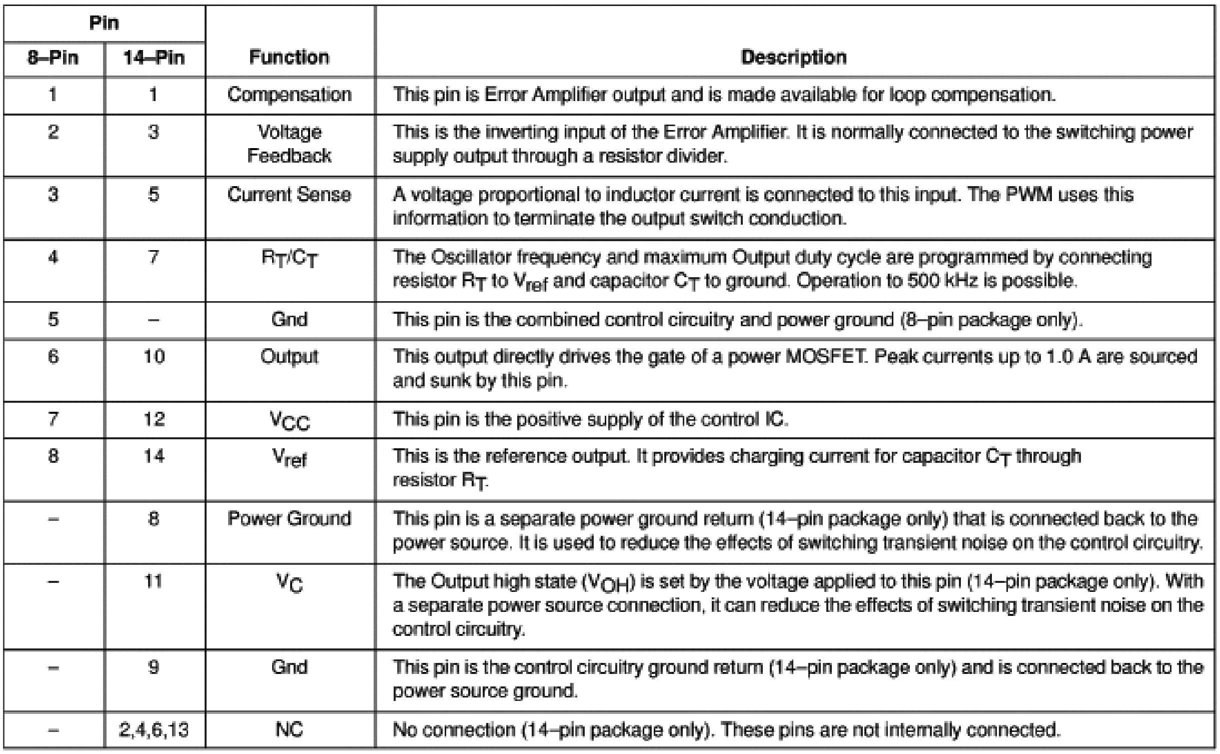


V_{CC} 7(12)
V_{ref}
8(14)
R
R
5.0V Reference
V_{CC} Undervoltage Lockout
V_{ref} Undervoltage Lockout
V_C
7(11)
R_TC_T
4(7)
Oscillator
Latching PWM
Output
6(10)
Power Ground
5(8)
Voltage Feedback Input
2(3)
Error Amplifier
Output Compensation
1(1)
Current Sense Input
3(5)
Gnd 5(9)

CL06532096_010.eps
060700

Figure 9-1

9.1.4 Pin function description



Pin		Function	Description
8–Pin	14–Pin		
1	1	Compensation	This pin is Error Amplifier output and is made available for loop compensation.
2	3	Voltage Feedback	This is the inverting input of the Error Amplifier. It is normally connected to the switching power supply output through a resistor divider.
3	5	Current Sense	A voltage proportional to inductor current is connected to this input. The PWM uses this information to terminate the output switch conduction.
4	7	R_T/C_T	The Oscillator frequency and maximum Output duty cycle are programmed by connecting resistor R_T to V_{ref} and capacitor C_T to ground. Operation to 500 kHz is possible.
5	–	Gnd	This pin is the combined control circuitry and power ground (8–pin package only).
6	10	Output	This output directly drives the gate of a power MOSFET. Peak currents up to 1.0 A are sourced and sunk by this pin.
7	12	V_{CC}	This pin is the positive supply of the control IC.
8	14	V_{ref}	This is the reference output. It provides charging current for capacitor C_T through resistor R_T.
–	8	Power Ground	This pin is a separate power ground return (14–pin package only) that is connected back to the power source. It is used to reduce the effects of switching transient noise on the control circuitry.
–	11	V_C	The Output high state (V_{OH}) is set by the voltage applied to this pin (14–pin package only). With a separate power source connection, it can reduce the effects of switching transient noise on the control circuitry.
–	9	Gnd	This pin is the control circuitry ground return (14–pin package only) and is connected back to the power source ground.
–	2,4,6,13	NC	No connection (14–pin package only). These pins are not internally connected.

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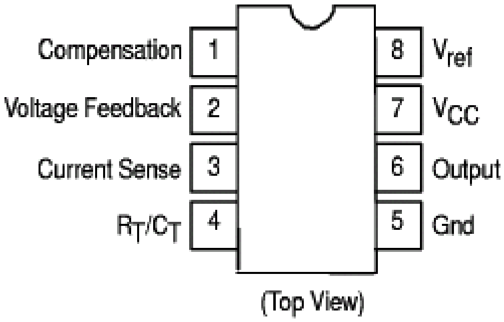
Figure 9-2

9.1.5 Pin connection



CL06532096_012.eps
060700

Figure 9-3

9.1.6 Output voltages

- +12V (For Display board, Monoboard, A/V board) created via D6241, C2240, L5240, C2232 (This voltage is also present during standby)
- +5V_ stdby (For Display board, Standby PCB, Monoboard) created from +6V via R3233 and D6233 (This voltage is also present during standby)
- +6V_stdby (Reserve) created from D6230, C2230, L5231 (This voltage is also present during standby)
- +5V (For Monoboard, A/V board) derive from +6V stdby via Mosfet 7238, C2239 and it will be switch off via R3235, T7235 during Standby.
- -5V (For Monoboard, A/V board) created from D6250, C2250, C2259, L5222, R3259, T7255 regulator circuit and will switch off via R3258, T7257 during standby (control signal Standby is HIGH)
- 3V3 (For Monoboard, A/V board) The 3V3 power supply is regulated by the control loop comprising of 7201, 7131 and 7145 of the switch mode PSU. This voltage is also present during standby
- -40V (For Display board) created via D6261,R3260, L5260, C2260 This will not be present during standby

9.2 CONTROL CIRCUITRY

9.2.1 Mains input circuit

The mains voltage is rectified by bridge rectifier (D6118 to D6121) and filter by C2121. The DC voltage across C2121is the DC input voltage ,approximately 300V, is the DC input to pin 1 of transformer T5131.The mains input also consists of a lighting protection R3120.

9.2.2 Start-up and takeover circuitry

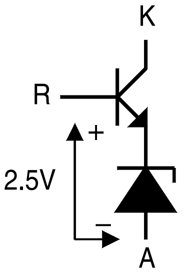
The start-up circuitry consist R3123, R3134, R3111, D6129, C2134 and with the mains voltage input, the C2134 will charge via R3123 and R3134. When the voltage at pin 7 of IC7145 reaches the start-up threshold of min 14.5V, IC7145 will start-up and the control circuit start to operate. After start-up, the max sinking current of 17mA is required by IC7145 which is not able to be delivered by the start-up circuitry, so the takeover circuitry must be present.
If the takeover circuit does not occurred, the supply voltage at pin 7 will decrease gradually till it reaches the IC7145 minimal operating voltage of 8.5Vand the IC will switch off. The whole operation cycle will repeat itself with audible hiccup sound if takeover is not present.

The takeover circuit comprises of D6133, R3135, I5135, C2134. During the control circuit start-up, the voltage across winding pin 7 and 9 will gradually built up and charged C2134 via D6133, R3135 which will takeover the supply voltage of T7145 at pin 7.

9.2.3 Secondary voltage sensing

The secondary voltage regulating circuit comprise of the opto-coupler 7131 which isolate the error signal from the control IC7145 ,on the primary side, and a reference component 7201 (TL431). The 7201 can be represented by two components:

- A very stable and accurate reference diode
- A high gain amplifier



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130799

Figure 9-4

When the output voltage increases, due to a reduction in the load, the voltage across R3205 and R3206 increases to above the internal reference voltage of about 2.5V then TL431 conduct. The current through the opto-coupler 7131 will increase due to the fact that the series resistor in 7201 decreases. This result in a increase of voltage to pin 2 of IC7145, thus reducing the on-time of FET 7125.
In the event of a decrease in output voltage (increase in load),the control circuit will operate in the opposite way to the explaination above.

9.2.4 Primary current sensing

The current through the FET 7125 resulting in a voltage drop across R3126,R3127,R3128 which is couple to pin 3 of IC7145,current sense input.The higher the input voltage, the more the primary current is limited. In this way the maximum output power of the power supply is limited.

9.2.5 Undervoltage protection

Two undervoltage lockout comparators have been incorporated to guarantee that the IC7145 is fully functional before the output stage is enable. The supply voltage at pin 7 and reference voltage at pin 8 of IC7145 are each monitored by separate comparators with built-in hysteresis.
If the supply voltage at pin 7 of IC7145 drops below 10V (typical), due to a secondary voltage is short-circuit or excessive load, the drive pulse at pin 6 of IC7145 will be disabled and the controller will switch off the complete SMPS.
Remarks : In the event of the overvoltage situation remaining present, the SMPS will go in sequence of protection,start- up cycle, protection and the cycle repeats. This effect is highly audible.

9.2.6 Overvoltage protection

The overvoltage circuitry comprising of D6141,R3139, R3150, R3141,T7141, T7150 which is used to detect an over voltage situation on the secondary side of the transformer.
After start-up, when the voltage across C2135 exceeds 18V,the overvoltage circuit will trigger the internal latch circuit, pin 1 of IC7145 and the output buffer is disabled and it goes into the overvoltage protection and a complete restart sequence is required.

9.3 List of abbreviations

B	Buffered Video input Blue from DVD monoboard
BC_AUX	Blue or Chroma input from AUX-scart
BC_TV	Blue or Chroma output to TV-scart
C_ENC	Buffered Chroma input from DVD monoboard
CVBS	Buffered Composite video input from DVD monoboard
DC_OFF	Control signal to switch off û8Vstby and +12Vstby during standby
DIG_OUT	Digital out
FBIN_AUX	Fast blanking input from AUX-scart
FBOUT_TV	Fast blanking output to TV-scart
G	Buffered Video input Green from DVD monoboard
GIN_AUX	Video input Green from AUX-scart
GOUT_TV	Video output Green to TV-scart
HP_L	Audio output left to headphone and audio scart switch TEA6420
HP_R	Audio output right to headphone and audio scart switch TEA6420
KILL	Kill control signal for audio outputs and for soft mute of DAC
LIN_AUX	Audio input left from AUX-scart
LIN_TV	Audio input left from TV-scart
LOUT_AUX	Audio output left to AUX-scart
LOUT_TV	Audio output left to TV-scart
LRCLK	Left/Right clock
PCM_CLK	Audio system clock for DAC
PCM_OUT0	Audio serial output data
R	Buffered Video input Red from DVD monoboard
RCIN_TV	Red or Chroma input from TV-scart
RCOUT_TV	Red or Chroma output to TV-scart
RIN_AUX	Audio input right from AUX-scart
RIN_TV	Audio input right from TV-scart
ROUT_AUX	Audio output right to AUX-scart
ROUT_TV	Audio output right to TV-scart
SCL	I2C bus clock
SCLK	Audio serial bit clock
SDA	I2C bus data
SELECT	Control signal for video scart switches; high = TV ,low = AUX
SELECT_HIGH	Control signal for switching fast blanking and slow blanking signals; high = TV,.low = AUX
SLB_AUX	Slow blanking control signal from AUX-scart
SLB_TV	Slow blanking control signal to TV-scart
STANDBY	Control signal from STI5505 used to swith off û8Vstby and +12Vstby during standby.
STEREO_L	Audio cinch output left
STEREO_R	Audio cinch output right
Y_ENC	Buffered Luma input from DVD monoboard
YCVBSIN_AUX	Luma or CVBS input from AUX-scart
YCVBSIN_TV	Luma or CVBS input from TV-scart
YCVBSOUT_AUX	Luma or CVBS output to AUX-scart
YCVBSOUT_TV	Luma or CVBS output to TV-scart
0/6/12	Scart switch control signal A/V board. 0V : loop through (AUX to TV), 6V : play 16:9 format, 12V : play 4:3 format

10. Spare parts list

DVD612 /001

Various

0010	3139 247 52811	CAB FRONT DVD612/00X PPT
0025	3139 247 52941	BTN STANDBY DVD612/00X PPT
0030	3139 247 52851	WINDOW DVD612/00X PPT
0040	3139 247 52911	BTN CONTROL DVD612/00X PPT
0200	3139 247 52771	FRONT ASSY DVD612/00X
0224	3139 247 53011	BACK PLATE DVD612/00X PPT
0232	3139 247 52991	COVER TOP DVD612/00X PPT
0261	4822 321 11139	POWER CORD
0333	4822 321 11357	AUDIO CORD SET
0382	3111 170 21992	SCART CABLE (L=1.10M) BMS
0384	3139 228 87051	PROD.ASSY RC19133001/01 PACKED
0387	3139 246 10681	IFU DVD612/00X
1002	3139 248 80861	PCBAS AV DVD612 EU
1003	3139 248 80941	PCBAS FR DVD612 EU
1005	3122 427 22572	PSU DVD VFM EURO
1014	3104 157 11190	CWAS FLEX DVD 22 130 32S

AV PWB

Various

1002	2422 025 12352	CON BM EURO H 21P F BK GRND-L
1005	4822 265 11566	3P YKC21-3930
1010	2422 025 16526	CON BM V 22P F 1.00 FFC 0.3 R
1011	4822 267 31729	

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2101	4822 124 40207	100µF 20% 25V
2103	4822 124 40207	100µF 20% 25V
2104	4822 124 40207	100µF 20% 25V
2105	4822 124 40207	100µF 20% 25V
2106	4822 126 14305	100nF 10% 16V 0603
2109	4822 124 40207	100µF 20% 25V
2111	4822 126 14494	22nF 10% 25V 0603
2112	4822 122 31765	100pF 2% 63V
2115	4822 126 13883	220pF 5% 50V
2116	4822 126 13883	220pF 5% 50V
2117	4822 126 13883	220pF 5% 50V
2200	4822 126 14305	100nF 10% 16V 0603
2201	4822 124 80231	47µF 20% 16V
2202	4822 124 80231	47µF 20% 16V
2203	4822 126 14305	100nF 10% 16V 0603
2204	4822 124 23432	100µF 20% 10V
2205	4822 124 40207	100µF 20% 25V
2206	4822 124 80231	47µF 20% 16V
2207	4822 126 14305	100nF 10% 16V 0603
2208	4822 124 11947	10µF 20% 16V
2209	3198 017 44740	0603 10V 470nF COL
2210	4822 126 14305	100nF 10% 16V 0603
2211	4822 124 40207	100µF 20% 25V
2212	3198 016 31020	0603 25V 1nF
2213	4822 126 14305	100nF 10% 16V 0603
2214	4822 122 31765	100pF 2% 63V
2215	3198 016 31020	0603 25V 1nF
2216	4822 124 11947	10µF 20% 16V
2226	4822 124 40207	100µF 20% 25V
2227	4822 124 11947	10µF 20% 16V
2228	3198 016 31020	0603 25V 1nF
2229	4822 122 31765	100pF 2% 63V
2230	3198 016 31020	0603 25V 1nF
2232	4822 124 11947	10µF 20% 16V
2233	4822 122 33777	47pF 5% 63V
2234	4822 126 14305	100nF 10% 16V 0603
2235	4822 122 33777	47pF 5% 63V
2236	4822 124 40207	100µF 20% 25V
2237	4822 124 80195	470µF 20% 10V
2243	4822 126 13883	220pF 5% 50V
2244	4822 126 13883	220pF 5% 50V
2249	4822 122 33761	22pF 5% 50V

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3100	4822 051 20008	0Ω jumper . (0805)
3111	4822 051 30271	270Ω 5% 0.062W
3113	4822 051 30101	100Ω 5% 0.062W
3114	4822 051 30101	100Ω 5% 0.062W
3115	4822 117 12968	820Ω 5% 0.62W
3116	4822 051 30682	6k8 5% 0.062W
3117	4822 051 30222	2k2 5% 0.062W
3118	4822 051 30681	680Ω 5% 0.062W
3119	4822 051 30472	4k7 5% 0.062W
3120	4822 051 30759	75Ω 5% 0.062W
3121	4822 051 30271	270Ω 5% 0.062W
3122	4822 051 30101	100Ω 5% 0.062W
3123	4822 051 30101	100Ω 5% 0.062W
3124	4822 051 30759	75Ω 5% 0.062W
3125	4822 051 30682	6k8 5% 0.062W
3126	4822 117 12968	820Ω 5% 0.62W
3127	4822 051 30222	2k2 5% 0.062W
3128	4822 051 30681	680Ω 5% 0.062W
3129	4822 051 30472	4k7 5% 0.062W
3130	4822 051 30221	220Ω 5% 0.062W
3131	4822 051 30271	270Ω 5% 0.062W
3132	4822 051 30101	100Ω 5% 0.062W
3133	4822 051 30101	100Ω 5% 0.062W
3134	4822 051 30759	75Ω 5% 0.062W
3135	4822 117 12968	820Ω 5% 0.62W
3136	4822 051 30682	6k8 5% 0.062W
3137	4822 051 30222	2k2 5% 0.062W
3138	4822 051 30472	4k7 5% 0.062W
3139	4822 051 30681	680Ω 5% 0.062W
3146	4822 051 30759	75Ω 5% 0.062W
3147	4822 051 30223	22k 5% 0.062W
3148	4822 051 30102	1k 5% 0.062W
3149	4822 116 83884	47k 5% 0.5W
3169	4822 051 30102	1k 5% 0.062W
3170	4822 051 30102	1k 5% 0.062W
3202	4822 051 30681	680Ω 5% 0.062W
3203	4822 116 52228	680Ω 5% 0.5W
3204	4822 116 52195	47Ω 5% 0.5W
3205	4822 117 12902	8k2 1% 0.063W 0603
3206	4822 051 30472	4k7 5% 0.062W
3207	4822 117 11152	4Ω7 5%
3208	4822 051 30103	10k 5% 0.062W
3210	4822 051 30103	10k 5% 0.062W
3211	4822 051 30272	2k7 5% 0.062W
3212	4822 051 30103	10k 5% 0.062W
3213	4822 051 30272	2k7 5% 0.062W
3225	4822 051 30681	680Ω 5% 0.062W
3226	4822 051 30103	10k 5% 0.062W
3227	4822 051 30272	2k7 5% 0.062W
3228	4822 116 52228	680Ω 5% 0.5W
3229	4822 116 52263	2k7 5% 0.5W
3230	4822 051 30103	10k 5% 0.062W
3231	4822 117 12902	8k2 1% 0.063W 0603
3232	4822 051 30472	4k7 5% 0.062W
3233	4822 051 30103	10k 5% 0.062W
3235	4822 116 52175	100Ω 5% 0.5W
3236	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3237	4822 117 11152	4Ω7 5%
3238	4822 051 30472	4k7 5% 0.062W
3239	4822 117 13632	100k 1% 0603 0.62W
3240	4822 051 30271	270Ω 5% 0.062W
3241	4822 051 30101	100Ω 5% 0.062W
3242	4822 051 30759	75Ω 5% 0.062W
3243	4822 117 12968	820Ω 5% 0.62W
3244	4822 051 30682	6k8 5% 0.062W
3245	4822 051 30222	2k2 5% 0.062W
3246	4822 051 30472	4k7 5% 0.062W
3247	4822 051 30681	680Ω 5% 0.062W
3248	4822 051 30759	75Ω 5% 0.062W
3249	4822 051 30222	2k2 5% 0.062W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

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5200	4822 157 70601	100µH (920927085A)

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6102	4822 130 11522	UDZ15B
6103	4822 130 11522	UDZ15B

Front PWB

Various

1100	4822 276 13775	SWITCH
1101	4822 276 13775	SWITCH
1102	4822 276 13775	SWITCH
1106	4822 276 13775	SWITCH
1107	4822 276 13775	SWITCH
1108	4822 276 13775	SWITCH
1109	4822 276 13775	SWITCH
1110	2422 540 98423	RES CER 8MHz CSTS*MHz 03
1111	4822 276 13775	SWITCH
1113	3139 240 50021	FTD 11-MT-126GNK DVD602
1115	4822 267 10565	4P
1117	2412 020 00724	CON BM V 2P M 2.50 EH B
1118	4822 267 10637	B5B-PH-K (5P)
1205	2422 025 12488	CON BM H 2P M 2.50 EH B

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2100	4822 126 13883	220pF 5% 50V
2101	4822 126 13883	220pF 5% 50V
2105	4822 126 14549	33nF 16V O6O3
2106	4822 124 40207	100µF 20% 25V
2107	3198 024 44730	47nF 50V 0603
2108	3198 024 44730	47nF 50V 0603
2109	3198 024 44730	47nF 50V 0603
2110	3198 024 44730	47nF 50V 0603
2111	3198 024 44730	47nF 50V 0603
2114	4822 122 33761	22pF 5% 50V
2115	4822 122 33761	22pF 5% 50V
2116	4822 126 14549	33nF 16V O6O3
2122	4822 126 14549	33nF 16V O6O3
2123	4822 124 40207	100µF 20% 25V
2124	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2125	4822 122 33761	22pF 5% 50V
2126	4822 124 11947	10µF 20% 16V
2128	5322 126 11578	1nF 10% 50V 0603
2129	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2130	4822 124 41751	47µF 20% 50V
2201	4822 126 14549	33nF 16V O6O3

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3100	4822 051 30223	22k 5% 0.062W
3101	4822 051 30273	27k 5% 0.062W
3102	4822 117 12925	47k 1% 0.063W 0603
3103	4822 117 13608	4.7Ω 5% 0603 0.0016W
3104	4822 117 13632	100k 1% 0603 0.62W
3105	4822 117 13613	2Ω2 5% 0603
3106	4822 051 30221	220Ω 5% 0.062W
3107	4822 117 13608	4.7Ω 5% 0603 0.0016W
3108	4822 117 13613	2Ω2 5% 0603
3109	4822 051 30472	4k7 5% 0.062W
3110	4822 051 30472	4k7 5% 0.062W
3111	4822 051 30472	4k7 5% 0.062W
3112	4822 051 30472	4k7 5% 0.062W
3113	4822 051 30472	4k7 5% 0.062W
3114	4822 051 30109	10Ω 5% 0.062W
3115	4822 051 30472	4k7 5% 0.062W
3118	4822 051 30103	10k 5% 0.062W
3119	4822 051 30103	10k 5% 0.062W
3120	4822 051 30471	470Ω 5% 0.062W
3121	4822 051 30472	4k7 5% 0.062W
3122	4822 051 30109	10Ω 5% 0.062W
3123	4822 051 30103	10k 5% 0.062W
3125	4822 051 30109	10Ω 5% 0.062W
3130	4822 051 30109	10Ω 5% 0.062W
3132	4822 051 30331	330Ω 5% 0.062W
3133	4822 051 30109	10Ω 5% 0.062W
3134	4822 051 30331	330Ω 5% 0.062W
3136	4822 051 30102	1k 5% 0.062W
3138	4822 051 30471	470Ω 5% 0.062W
3139	4822 051 30472	4k7 5% 0.062W
3140	4822 051 30103	10k 5% 0.062W
3143	4822 051 30103	10k 5% 0.062W
3144	4822 117 13632	100k 1% 0603 0.62W
3146	4822 051 30103	10k 5% 0.062W
3147	4822 051 30103	10k 5% 0.062W
3148	4822 051 30101	100Ω 5% 0.062W
3149	4822 051 30101	100Ω 5% 0.062W

3155	4822 051 30008	0Ω jumper
3156	4822 051 30008	0Ω jumper
3159	4822 051 30472	4k7 5% 0.062W

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6100	4822 130 11397	BAS316
6101	9965 000 04709	UDZ6.2BTE-17
6102	4822 130 10837	UDZS8.2B
6104	4822 130 11397	BAS316

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7101	4822 130 60511	BC847B
7104	3104 123 94532	TMP87CH74F-1E29-V2.18-DVDSLAVE
7105	4822 130 40981	BC337-25
7106	4822 130 40854	BC327
7107	4822 130 60511	BC847B
7108	4822 130 60511	BC847B
7110	9322 155 98667	IR RECEIVER TSOP2236YA1(VISH)L
7112	4822 209 31257	MC79L24ACP

PSU PWB

Various

0101▲	4822 265 20723	B2P3-VH
0120▲	4822 265 11253	FUSE HOLDER 2P
0205	2422 025 08333	CON BM V 12P M 2.50 EH B
0208	4822 267 10565	4P
1120▲	4822 253 30383	19181 (2,5A)

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2120▲	4822 121 10711	100nF 20% 275V
2121	2222 151 90048	47µF 20% 400V
2127	4822 122 50116	470pF 10% 1KV
2130▲	4822 126 13841	1nF 20% 250V
2131▲	4822 126 13841	1nF 20% 250V
2134	4822 124 11566	47µF 20% 50V
2135	4822 124 22652	2.2µF 20% 50V
2141	4822 124 22652	2.2µF 20% 50V
2143	4822 126 14585	100nF 10% 50V
2145	5322 126 10223	4.7nF 10% 63V
2146	4822 126 14585	100nF 10% 50V
2150	4822 126 14585	100nF 10% 50V
2156	5322 122 31863	63V 330pF PM5
2157	5322 122 32268	63V 470P PM5
2202	4822 126 14585	100nF 10% 50V
2210	2020 012 93728	EL YK 10V S 2200µF PM20 B
2230	2020 012 93757	EL YK 10V S 1000µF PM20 B
2232	4822 124 81021	100µF 20% 16V
2235	4822 126 14549	33nF 16V O6O3
2238	4822 124 81021	100µF 20% 16V
2239	4822 124 81021	100µF 20% 16V
2240	4822 124 81147	470µF 20% YK 25V
2250	4822 124 41545	220µF 20% 16V
2259	4822 124 81021	100µF 20% 16V
2260	4822 124 81151	22µF 50V
2299	5322 122 32654	63V 22nF PM10 R

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3111	4822 116 52176	10Ω 5% 0.5W
3120▲	2322 595 90023	VDR DC 1M A/423V S MAX 800V B
3123	4822 116 52291	56k 5% 0.5W
3125	4822 051 20223	22k 5% 0.1W
3126	4822 116 81801	3Ω6 5% 0.5W
3127	4822 116 80176	1Ω 5% 0.5W
3128	4822 116 80176	1Ω 5% 0.5W
3131	4822 051 10274	270k 2% 0.25W
3132▲	4822 052 11108	1Ω 5% 0.5W
3134	4822 116 52291	56k 5% 0.5W
3135	4822 116 52182	15Ω 5% 0.5W
3136	4822 051 10274	270k 2% 0.25W
3137	4822 117 10837	100k 1% 0.1W
3139	4822 051 20479	47Ω 5% 0.1W
3140	4822 116 52226	560Ω 5% 0.5W
3141	4822 117 11507	6k8 1% 0.1W
3143	3198 021 53630	36k 5% 0.1W 0805
3145	4822 117 10965	18k 1% 0.1W
3146	4822 117 11148	56k 1% 0.1W
3150	4822 117 11139	1k5 1% 0.1W
3153	4822 116 83933	15k 1% 0.1W
3154	4822 117 11139	1k5 1% 0.1W
3155	4822 116 52219	330Ω 5% 0.5W
3156	4822 051 20339	33Ω 5% 0.1W
3201	4822 116 52176	10Ω 5% 0.5W
3202	4822 117 11141	1k8 1% 0.1W
3204	4822 117 11504	270Ω 1% 0.1W
3205	4822 117 11145	4k7 1% 0.1W
3206	4822 051 20391	390Ω 5% 0.1W
3207	4822 051 10102	1k 2% 0.25W
3233	4822 052 10228	2Ω2 5% 0.33W
3235	4822 116 83933	15k 1% 0.1W
3254	4822 051 30223	22k 5% 0.062W
3255	5322 117 13049	470Ω 1% 0.063W 0603 RC22H
3256	5322 117 13053	6k8 1% 0.063W 0603 RC22H
3257	4822 051 30563	56k 5% 0.062W
3258	4822 051 30103	10k 5% 0.062W
3259	4822 051 20102	1k 5% 0.1W
3260	4822 051 20101	100Ω 5% 0.1W
3262	4822 116 83872	220Ω 5% 0.5W
3263	4822 116 52249	1k8 5% 0.5W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

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5120▲	4822 157 11846	
5121▲	4822 157 53348	TER CHOKE ASSY CU15D3
5125	4822 157 11411	100mH z
5131▲	3128 138 39631	SM TRANSFORMER - CT282D4
5135	4822 157 70698	27µH
5210	2422 535 94638	IND FXD LHL08 S 6U8 PM20 A
5222▲	4822 156 20966	47 µH
5231	2422 535 94638	IND FXD LHL08 S 6U8 PM20 A
5240	4822 157 51195	1 µH 20% 4X9.8MM AXIAL
5260	4822 157 11517	10µH 5% 2.3X3.4

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6118	4822 130 31603	1N4006
6119	4822 130 31603	1N4006
6120	4822 130 31603	1N4006
6121	4822 130 31603	1N4006
6129	9340 548 67115	DIO REG SM PDZ22B (PHSE) R
6132	4822 130 30842	BAV21
6133	4822 130 30842	BAV21
6140	4822 130 30621	1N4148
6141	4822 130 11152	UDZ18B
6150	4822 130 11148	UDZ4.7B
6210	4822 130 11584	BYW98-200-C1
6230	4822 130 41602	BYW95C
6233	4822 130 34174	BZX79-B4V7
6241	4822 130 11584	BYW98-200-C1
6250	4822 130 42488	BYD33D
6261	4822 130 42606	BYD33J

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7125	4822 130 11417	STP3NB60FP
7131▲	9322 149 04682	OPT CP TCET1102(G) (VISH) L
7141	4822 130 44568	BC557B
7145	9322 145 88682	UC3842A
7150	4822 130 44257	BC547
7201	4822 209 81397	TL431CLPST
7235	4822 130 42705	BC847
7255	4822 130 40855	BC337
7256	5322 130 42756	BC857C
7257	5322 130 42756	BC857C

VAL 6011

Various

0001	9305 023 61101	VAL6011/01

MONO PWB

Various

1104	2422 025 15963	CON BM H 24P F 0.50 FFC SMD R
1106	2422 025 16158	CON BM H 8P F 1.00 FFC 0.3 R
1205	2422 540 98428	RES CER SM 8M467 CSTCC8.46MHz R
1300	2422 540 98426	RES CER SM 6MHz CSTCC6.00MHz R
1301	4822 267 51454	CONN. 11P FEMALE
1603	2422 025 16389	CON BM V 22P F 1.00 FFC 0.3 R
1604	2422 025 16388	CON BM V 16P F 1.00 FFC 0.3 R

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2100	4822 126 14305	100nF 10% 16V 0603
2101	4822 126 14305	100nF 10% 16V 0603
2103	4822 124 80151	47µF 16V
2104	4822 126 13193	4.7nF 10% 63V
2105	4822 122 33761	22pF 5% 50V
2107	4822 126 13956	68pF 5% 63V CASE 0603
2108	4822 126 14315	390pF 5% 50V 0603
2109	2020 552 95697	
2110	2222 861 15222	63V 2N2 PM5
2111	4822 126 14305	100nF 10% 16V 0603
2112	5322 126 11578	1nF 10% 50V 0603
2113	4822 126 14305	100nF 10% 16V 0603
2114	4822 122 31765	100pF 2% 63V
2115	4822 126 14305	100nF 10% 16V 0603
2116	4822 126 14305	100nF 10% 16V 0603
2117	4822 126 14305	100nF 10% 16V 0603
2118	3198 017 42230	0603 50V 22nF COL
2119	3198 017 42230	0603 50V 22nF COL
2120	4822 126 14305	100nF 10% 16V 0603
2121	4822 126 13879	220nF 20% 16V
2122	3198 017 42230	0603 50V 22nF COL
2123	4822 126 14305	100nF 10% 16V 0603
2124	4822 126 14305	100nF 10% 16V 0603
2125	4822 126 14305	100nF 10% 16V 0603
2126	4822 126 14305	100nF 10% 16V 0603
2127	4822 126 14305	100nF 10% 16V 0603
2128	4822 126 14508	180pF 5% 50V 0603
2129	4822 126 14508	180pF 5% 50V 0603
2130	4822 122 33761	22pF 5% 50V
2131	4822 126 14494	22nF 10% 25V 0603
2136	4822 126 14305	100nF 10% 16V 0603
2137	4822 126 14305	100nF 10% 16V 0603
2138	4822 126 14305	100nF 10% 16V 0603
2139	4822 126 14305	100nF 10% 16V 0603
2140	4822 126 14241	0603 50V 330P COL R
2141	4822 122 33761	22pF 5% 50V
2142	5322 126 11583	10nF 10% 50V 0603
2143	4822 126 13883	220pF 5% 50V
2144	4822 126 13883	220pF 5% 50V
2145	4822 126 13883	220pF 5% 50V
2146	4822 126 14305	100nF 10% 16V 0603
2203	4822 126 14305	100nF 10% 16V 0603
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 126 14305	100nF 10% 16V 0603
2206	4822 126 14549	33nF 16V O6O3
2207	5322 126 11578	1nF 10% 50V 0603
2208	4822 126 14305	100nF 10% 16V 0603
2209	4822 126 14305	100nF 10% 16V 0603
2210	5322 126 11578	1nF 10% 50V 0603
2212	4822 126 14305	100nF 10% 16V 0603
2213	4822 126 14305	100nF 10% 16V 0603
2214	3198 017 42230	0603 50V 22nF COL
2215	4822 124 23237	22µF 6.3V
2216	5322 126 11578	1nF 10% 50V 0603
2226	4822 126 14305	100nF 10% 16V 0603
2227	4822 126 14305	100nF 10% 16V 0603
2228	4822 126 14305	100nF 10% 16V 0603
2300	4822 126 14305	100nF 10% 16V 0603
2301	4822 126 14305	100nF 10% 16V 0603
2302	4822 126 14305	100nF 10% 16V 0603
2303	4822 124 80349	47µF 20% 6.3V
2304	3198 017 42230	0603 50V 22nF COL
2305	3198 017 42230	0603 50V 22nF COL
2306	4822 124 23002	10µF 16V
2307	3198 017 42230	0603 50V 22nF COL
2309	4822 126 14305	100nF 10% 16V 0603
2310	4822 126 14305	100nF 10% 16V 0603
2314	4822 126 14305	100nF 10% 16V 0603
2315	4822 126 14305	100nF 10% 16V 0603
2318	5322 122 33861	120pF 10% 50V
2319	4822 126 11669	27pF
2401	4822 126 14305	100nF 10% 16V 0603
2402	4822 126 14305	100nF 10% 16V 0603
2403	4822 126 14305	100nF 10% 16V 0603
2404	4822 126 14305	100nF 10% 16V 0603
2405	4822 126 14305	100nF 10% 16V 0603
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603

2409	4822 126 14305	100nF 10% 16V 0603
2410	4822 126 14305	100nF 10% 16V 0603
2411	4822 126 14305	100nF 10% 16V 0603
2412	4822 126 14305	100nF 10% 16V 0603
2413	4822 126 14305	100nF 10% 16V 0603
2418	4822 124 12095	100µF 20% 16V
2419	4822 124 80349	47µF 20% 6.3V
2420	4822 124 80349	47µF 20% 6.3V
2500	4822 126 14305	100nF 10% 16V 0603
2502	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2503	4822 126 14305	100nF 10% 16V 0603
2504	4822 122 31765	100pF 2% 63V
2505	4822 126 14494	22nF 10% 25V 0603
2506	4822 124 23002	10µF 16V
2507	4822 126 14305	100nF 10% 16V 0603
2508	5322 126 11579	3.3nF 10% 63V
2509	4822 126 14241	0603 50V 330P COL R
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2513	4822 126 14305	100nF 10% 16V 0603
2514	4822 126 14305	100nF 10% 16V 0603
2515	4822 126 14305	100nF 10% 16V 0603
2516	4822 126 14305	100nF 10% 16V 0603
2517	4822 126 14305	100nF 10% 16V 0603
2518	4822 126 14305	100nF 10% 16V 0603
2519	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	4822 126 14305	100nF 10% 16V 0603
2523	4822 126 14305	100nF 10% 16V 0603
2524	4822 126 14305	100nF 10% 16V 0603
2525	4822 126 14305	100nF 10% 16V 0603
2526	4822 126 14305	100nF 10% 16V 0603
2527	4822 126 14305	100nF 10% 16V 0603
2528	4822 126 14305	100nF 10% 16V 0603
2529	4822 126 14305	100nF 10% 16V 0603
2530	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2531	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2532	4822 122 33777	47pF 5% 63V
2533	4822 122 33777	47pF 5% 63V
2534	5322 126 11578	1nF 10% 50V 0603
2535	5322 126 11578	1nF 10% 50V 0603
2600	4822 126 14494	22nF 10% 25V 0603
2601	4822 126 14247	0603 50V 1N5 COL R
2602	4822 126 14247	0603 50V 1N5 COL R
2603	4822 126 14305	100nF 10% 16V 0603
2604	4822 124 12095	100µF 20% 16V
2605	4822 126 14494	22nF 10% 25V 0603
2606	4822 124 12095	100µF 20% 16V
2607	4822 124 12095	100µF 20% 16V
2608	4822 124 23002	10µF 16V
2609	4822 124 80151	47µF 16V
2610	4822 126 14305	100nF 10% 16V 0603
2611	4822 124 12095	100µF 20% 16V
2614	4822 122 33777	47pF 5% 63V
2615	4822 122 33777	47pF 5% 63V
2616	4822 122 33777	47pF 5% 63V
2617	4822 122 33777	47pF 5% 63V
2618	4822 126 14305	100nF 10% 16V 0603
2620	4822 122 33777	47pF 5% 63V
2621	4822 122 33777	47pF 5% 63V
2622	4822 122 33777	47pF 5% 63V
2623	4822 122 33777	47pF 5% 63V
2624	4822 122 33777	47pF 5% 63V
2625	4822 122 33777	47pF 5% 63V
2626	4822 122 33777	47pF 5% 63V
2627	4822 122 33777	47pF 5% 63V
2632	4822 124 12095	100µF 20% 16V
2633	4822 124 12095	100µF 20% 16V
2634	4822 126 14305	100nF 10% 16V 0603
2635	4822 126 14305	100nF 10% 16V 0603
2636	4822 126 14305	100nF 10% 16V 0603
2637	4822 126 14305	100nF 10% 16V 0603
2638	4822 126 14305	100nF 10% 16V 0603
2639	4822 126 14305	100nF 10% 16V 0603
2641	4822 122 33761	22pF 5% 50V

3100	4822 117 11152	4Ω7 5%
3102	5322 117 13034	1k5 1% 0.063W 0603 RC22H
3103	5322 117 13034	1k5 1% 0.063W 0603 RC22H
3104	5322 117 13062	390Ω 1% 0.063W 0603 RC22H
3105	4822 051 30103	10k 5% 0.062W
3106	4822 051 30479	47Ω 5% 0.062W
3107	4822 051 20228	2Ω2 5% 0.1W
3108	4822 051 20228	2Ω2 5% 0.1W
3110	4822 051 30479	47Ω 5% 0.062W
3111	5322 117 13058	150Ω 1% 0.063W 0603 RC22H
3112	5322 117 13021	47Ω 1% 0.063W 0603 RC22H
3114	4822 051 20228	2Ω2 5% 0.1W
3115	4822 051 20228	2Ω2 5% 0.1W
3116	5322 117 13042	3k9 1% 0.063W 0603 RC22H
3117	4822 051 30181	180Ω 5% 0.062W
3118	4822 051 30681	680Ω 5% 0.062W
3119	5322 117 13062	390Ω 1% 0.063W 0603 RC22H
3120	4822 051 30102	1k 5% 0.062W
3121	4822 051 30273	27k 5% 0.062W
3122	4822 051 30471	470Ω 5% 0.062W
3123	4822 051 30103	10k 5% 0.062W
3124	4822 051 30471	470Ω 5% 0.062W
3125	4822 051 30103	10k 5% 0.062W
3126	4822 051 30103	10k 5% 0.062W
3127	4822 051 30223	22k 5% 0.062W
3128	2322 704 69109	
3129	4822 051 30392	3k9 5% 0.063W 0603
3130	4822 051 20228	2Ω2 5% 0.1W
3131	4822 051 20228	2Ω2 5% 0.1W
3132	4822 051 20228	2Ω2 5% 0.1W
3133	4822 051 20228	2Ω2 5% 0.1W
3134	5322 117 13047	330Ω 1% 0.063W 0603 RC22H
3135	4822 117 13613	2Ω2 5% 0603
3137	4822 117 13613	2Ω2 5% 0603
3138	5322 117 13053	6k8 1% 0.063W 0603 RC22H
3139	4822 117 12917	1Ω 5% 0.062W CASE0603
3140	4822 051 30479	47Ω 5% 0.062W
3141	4822 117 11152	4Ω7 5%
3142	5322 117 13028	12k 1% 0.063W 0603 RC22H
3143	5322 117 13043	220Ω 1% 0.063W 0603 RC22H
3144	2322 704 69109	
3146	4822 051 30103	10k 5% 0.062W
3147	4822 051 30103	10k 5% 0.062W
3148	5322 117 13022	22k 1% 0.063W 0603 RC22H
3153	4822 117 12139	22Ω 5% 0.062W
3155	4822 051 30103	10k 5% 0.062W
3157	4822 051 30103	10k 5% 0.062W
3158	5322 117 13017	100Ω 1% 0.063W 0603 RC22H
3160	4822 051 30101	100Ω 5% 0.062W
3161	4822 117 13613	2Ω2 5% 0603
3162	4822 051 30101	100Ω 5% 0.062W
3163	4822 051 30273	27k 5% 0.062W
3164	4822 117 13613	2Ω2 5% 0603
3165	5322 117 13063	120Ω 1% 0.063W 0603 RC22H
3166	4822 051 30393	39k 5% 0.062W
3167	4822 051 30101	100Ω 5% 0.062W
3168	5322 117 13047	330Ω 1% 0.063W 0603 RC22H
3169	4822 051 30101	100Ω 5% 0.062W
3170	4822 051 30101	100Ω 5% 0.062W
3171	4822 051 30101	100Ω 5% 0.062W
3172	4822 117 13632	100k 1% 0603 0.62W
3173	4822 117 13632	100k 1% 0603 0.62W
3174	4822 117 11152	4Ω7 5%
3175	4822 117 13613	2Ω2 5% 0603
3176	4822 051 30153	15k 5% 0.062W
3178	4822 117 11151	1Ω 5%
3179	4822 051 30221	220Ω 5% 0.062W
3180	4822 117 13632	100k 1% 0603 0.62W
3181	4822 051 30561	560Ω 5% 0.062W
3182	5322 117 13018	1k0 1% 0.063W 0603 RC22H
3183	5322 117 13017	100Ω 1% 0.063W 0603 RC22H
3184	2322 704 61204	
3185	4822 117 11151	1Ω 5%
3187	4822 051 30273	27k 5% 0.062W
3189	4822 051 30008	0Ω jumper
3190	4822 051 30008	0Ω jumper
3191	4822 051 30008	0Ω jumper
3192	4822 051 30008	0Ω jumper
3193	4822 051 30008	0Ω jumper
3194	4822 051 30008	0Ω jumper
3195	4822 051 30008	0Ω jumper
3197	4822 051 30008	0Ω jumper
3198	5322 117 13049	470Ω 1% 0.063W 0603 RC22H
3199	5322 117 13042	3k9 1% 0.063W 0603 RC22H
3200	4822 051 30103	10k 5% 0.062W

3201	4822 117 11151	1Ω 5%
3202	4822 117 11151	1Ω 5%
3203	4822 051 30105	1M 5% 0.062W
3204	4822 051 30331	330Ω 5% 0.062W
3205	4822 051 30103	10k 5% 0.062W
3206	4822 051 30103	10k 5% 0.062W
3208	4822 051 30272	2k7 5% 0.062W
3209	4822 051 30472	4k7 5% 0.062W
3210	4822 051 30392	3k9 5% 0.063W 0603
3211	4822 051 30472	4k7 5% 0.062W
3212	4822 117 11152	4Ω7 5%
3213	4822 117 11152	4Ω7 5%
3214	4822 051 30392	3k9 5% 0.063W 0603
3215	4822 051 30103	10k 5% 0.062W
3219	4822 051 30103	10k 5% 0.062W
3220	4822 051 30103	10k 5% 0.062W
3221	4822 051 30103	10k 5% 0.062W
3224	4822 051 30151	150Ω 5% 0.062W
3225	2322 704 62004	
3226	4822 051 30103	10k 5% 0.062W
3227	4822 051 30472	4k7 5% 0.062W
3229	4822 051 30123	12k 5% 0.062W
3230	4822 051 30103	10k 5% 0.062W
3231	4822 051 30103	10k 5% 0.062W
3232	4822 117 13613	2Ω2 5% 0603
3234	4822 117 12902	8k2 1% 0.063W 0603
3235	4822 117 13632	100k 1% 0603 0.62W
3236	4822 051 30472	4k7 5% 0.062W
3237	4822 051 30103	10k 5% 0.062W
3238	4822 051 30103	10k 5% 0.062W
3239	4822 051 30008	0Ω jumper
3240	4822 051 30103	10k 5% 0.062W
3242	4822 051 30008	0Ω jumper
3243	4822 051 30008	0Ω jumper
3246	4822 051 30008	0Ω jumper
3247	4822 051 30008	0Ω jumper
3249	4822 051 30008	0Ω jumper
3250	4822 051 30008	0Ω jumper
3251	4822 051 30008	0Ω jumper
3252	4822 051 30008	0Ω jumper
3253	4822 051 30008	0Ω jumper
3254	4822 051 30008	0Ω jumper
3255	4822 051 30008	0Ω jumper
3256	4822 051 30008	0Ω jumper
3257	4822 051 30008	0Ω jumper
3258	4822 051 30008	0Ω jumper
3259	4822 117 11151	1Ω 5%
3260	4822 117 11151	1Ω 5%
3261	4822 051 30102	1k 5% 0.062W
3300	4822 117 11152	4Ω7 5%
3301	4822 051 30105	1M 5% 0.062W
3302	4822 051 30221	220Ω 5% 0.062W
3304	4822 051 30272	2k7 5% 0.062W
3305	4822 051 30272	2k7 5% 0.062W
3309	4822 051 30103	10k 5% 0.062W
3310	4822 051 30223	22k 5% 0.062W
3311	4822 051 30223	22k 5% 0.062W
3312	4822 051 30472	4k7 5% 0.062W
3313	4822 051 30472	4k7 5% 0.062W
3316	4822 051 20108	1Ω 5% 0.1W
3317	4822 051 20108	1Ω 5% 0.1W
3318	4822 051 30472	4k7 5% 0.062W
3319	4822 051 30479	47Ω 5% 0.062W
3320	4822 051 30472	4k7 5% 0.062W
3321	4822 051 30682	6k8 5% 0.062W
3322	5322 117 13026	4k7 1% 0.063W 0603 RC22H
3323	5322 117 13026	4k7 1% 0.063W 0603 RC22H
3324	4822 117 13632	100k 1% 0603 0.62W
3325	4822 051 30682	6k8 5% 0.062W
3326	4822 051 30479	47Ω 5% 0.062W
3327	4822 051 30682	6k8 5% 0.062W
3328	4822 051 30223	22k 5% 0.062W
3329	4822 051 30223	22k 5% 0.062W
3330	4822 051 30223	22k 5% 0.062W
3331	4822 051 30332	3k3 5% 0.062W
3332	4822 051 30332	3k3 5% 0.062W
3333	4822 051 30101	100Ω 5% 0.062W
3334	4822 051 30101	100Ω 5% 0.062W
3335	4822 051 30101	100Ω 5% 0.062W
3336	4822 051 30101	100Ω 5% 0.062W
3337	4822 051 30101	100Ω 5% 0.062W
3338	4822 051 30101	100Ω 5% 0.062W
3339	4822 051 30008	0Ω jumper
3340	4822 051 30008	0Ω jumper
3403	4822 051 30103	10k 5% 0.062W
3404	4822 051 30103	10k 5% 0.062W
3405	4822 051 30103	10k 5% 0.062W
3412	4822 051 30008	0Ω jumper
3414	4822 051 30008	0Ω jumper
3416	4822 051 30008	0Ω jumper
3500	4822 051 30332	3k3 5% 0.062W
3501	4822 051 30332	3k3 5% 0.062W

3502	4822 051 30223	22k 5% 0.062W
3503	4822 051 30103	10k 5% 0.062W
3504	4822 051 30103	10k 5% 0.062W
3505	4822 051 30103	10k 5% 0.062W
3506	4822 051 30103	10k 5% 0.062W
3507	4822 051 30472	4k7 5% 0.062W
3508	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3509	4822 051 30103	10k 5% 0.062W
3511	4822 051 30332	3k3 5% 0.062W
3512	4822 051 30332	3k3 5% 0.062W
3513	4822 051 30103	10k 5% 0.062W
3514	4822 051 30103	10k 5% 0.062W
3515	4822 051 30103	10k 5% 0.062W
3516	4822 051 30103	10k 5% 0.062W
3517	4822 051 30332	3k3 5% 0.062W
3519	4822 051 30103	10k 5% 0.062W
3520	4822 051 30103	10k 5% 0.062W
3521	4822 051 30103	10k 5% 0.062W
3522	4822 051 30103	10k 5% 0.062W
3523	4822 051 30332	3k3 5% 0.062W
3524	4822 051 30101	100Ω 5% 0.062W
3525	4822 051 30103	10k 5% 0.062W
3526	4822 051 30103	10k 5% 0.062W
3534	4822 051 30103	10k 5% 0.062W
3535	4822 051 30153	15k 5% 0.062W
3536	4822 051 30101	100Ω 5% 0.062W
3537	4822 051 30331	330Ω 5% 0.062W
3538	4822 051 30681	680Ω 5% 0.062W
3541	4822 051 30479	47Ω 5% 0.062W
3542	4822 051 30479	47Ω 5% 0.062W
3545	4822 051 30221	220Ω 5% 0.062W
3546	4822 051 30101	100Ω 5% 0.062W
3548	4822 051 30008	0Ω jumper
3549	4822 051 30008	0Ω jumper
3550	4822 051 30101	100Ω 5% 0.062W
3551	4822 051 30101	100Ω 5% 0.062W
3552	4822 051 30008	0Ω jumper
3554	4822 051 30008	0Ω jumper
3564	4822 051 30008	0Ω jumper
3566	4822 051 30008	0Ω jumper
3570	4822 051 30101	100Ω 5% 0.062W
3571	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3572	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3574	4822 051 30008	0Ω jumper
3605	4822 051 30008	0Ω jumper
3606	4822 117 12925	47k 1% 0.063W 0603
3607	4822 117 13632	100k 1% 0603 0.62W
3608	4822 117 13632	100k 1% 0603 0.62W
3609	4822 117 13632	100k 1% 0603 0.62W
3610	4822 051 30103	10k 5% 0.062W
3611	4822 051 30103	10k 5% 0.062W
3612	4822 051 30103	10k 5% 0.062W
3613	4822 051 30103	10k 5% 0.062W
3614	4822 051 30103	10k 5% 0.062W
3615	4822 051 30103	10k 5% 0.062W
3616	4822 051 30103	10k 5% 0.062W
3618	4822 051 30223	22k 5% 0.062W
3619	4822 051 30223	22k 5% 0.062W
3620	4822 051 30101	100Ω 5% 0.062W
3621	4822 051 30101	100Ω 5% 0.062W
3622	4822 051 30101	100Ω 5% 0.062W
3623	4822 051 30101	100Ω 5% 0.062W
3624	4822 051 30101	100Ω 5% 0.062W
3625	4822 051 30101	100Ω 5% 0.062W
3626	4822 051 30102	1k 5% 0.062W
3627	4822 051 30471	470Ω 5% 0.062W
3628	4822 051 30471	470Ω 5% 0.062W
3629	4822 051 30472	4k7 5% 0.062W
3630	4822 051 30221	220Ω 5% 0.062W
3631	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3632	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3633	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3635	4822 051 30682	6k8 5% 0.062W
3636	4822 051 30682	6k8 5% 0.062W
3637	4822 051 30332	3k3 5% 0.062W
3642	4822 051 30103	10k 5% 0.062W
3647	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3648	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3651	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3654	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3655	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3656	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3657	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3658	4822 051 30102	1k 5% 0.062W
3659	4822 051 30102	1k 5% 0.062W
3660	4822 051 30102	1k 5% 0.062W
3661	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3662	4822 051 30102	1k 5% 0.062W
3663	4822 051 30102	1k 5% 0.062W
3664	2322 704 64301	RST SM 0603 RC22H 430Ω PM1 R
3665	4822 117 12139	22Ω 5% 0.062W
3667	4822 051 30331	330Ω 5% 0.062W
3669	4822 051 30008	0Ω jumper
3671	4822 051 30222	2k2 5% 0.062W
3672	4822 051 30479	47Ω 5% 0.062W
3673	4822 051 30101	100Ω 5% 0.062W
3677	4822 051 30008	0Ω jumper
3678	4822 051 30008	0Ω jumper
3679	4822 051 30008	0Ω jumper
3681	4822 051 30008	0Ω jumper
3683	4822 051 30008	0Ω jumper
3685	4822 051 30008	0Ω jumper
3686	4822 051 30223	22k 5% 0.062W
3687	4822 051 30223	22k 5% 0.062W
3688	4822 051 30472	4k7 5% 0.062W
3689	4822 051 30223	22k 5% 0.062W
3692	4822 051 30103	10k 5% 0.062W
3693	4822 117 12925	47k 1% 0.063W 0603
3694	4822 117 13632	100k 1% 0603 0.62W
3696	4822 051 30472	4k7 5% 0.062W
3697	4822 117 13632	100k 1% 0603 0.62W
3698	4822 051 30103	10k 5% 0.062W
3699	4822 051 30103	10k 5% 0.062W
3700	4822 051 30472	4k7 5% 0.062W

5200	4822 157 11717	BLM31P500SPT
5300	4822 157 11717	BLM31P500SPT
5301	4822 157 11717	BLM31P500SPT
5402	4822 157 11499	BLM11P600SPT
5403	4822 157 11499	BLM11P600SPT
5501	4822 157 70299	2.2μH (NL322522T-2R2J)
5502	4822 157 70299	2.2μH (NL322522T-2R2J)
5503	4822 157 71206	BLM21A601SPT
5504	4822 157 71206	BLM21A601SPT
5600	4822 157 71206	BLM21A601SPT
5601	4822 157 11499	BLM11P600SPT
5602	4822 157 70298	15μH (NL322522T-150J)
5603	4822 157 71206	BLM21A601SPT
5604	4822 157 70298	15μH (NL322522T-150J)
5605	4822 157 70298	15μH (NL322522T-150J)
5606	4822 157 70298	15μH (NL322522T-150J)
5607	4822 157 70298	15μH (NL322522T-150J)
5608	4822 157 70298	15μH (NL322522T-150J)
5609	4822 157 11717	BLM31P500SPT
5610	4822 157 11717	BLM31P500SPT

6200	4822 130 11397	BAS316
6301	9322 128 69685	S1D
6302	9322 128 69685	S1D
6303	9322 128 69685	S1D
6600	4822 130 11528	1PS76SB10

7100	5322 130 42718	BFS20
7101	5322 130 42718	BFS20
7102	9352 637 37518	TZA1033HL
7103	4822 209 17229	BA5938FM
7104	4822 209 30095	LM833D
7105	4822 209 32073	MC34072D
7106	5322 130 42718	BFS20
7109	4822 209 15083	AN78M09
7110	5322 130 60803	BST72A
7111	4822 130 60511	BC847B
7112	4822 130 60511	BC847B
7113	4822 130 60511	BC847B
7114	4822 130 60511	BC847B
7115	4822 130 60373	BC856B
7116	4822 130 60511	BC847B
7117	4822 209 90927	L78L05ACD
7118	5322 130 60845	BC807-25
7119	4822 130 42804	BC817-25
7201	9351 869 80118	
7202	3104 123 85860	AM29F002T/4.3.13
7203	4822 130 60373	BC856B
7207	4822 209 17231	SAA7399HL
7208	9322 139 67685	IC SM MC33464N-45A (MOTA) R
7304	4822 209 16877	BA6856FP
7310	4822 209 15899	CY7C199-15C
7311	9352 637 83557	IC SM SAA7335HL/E/M2 (PHSE) Y
7312	4822 130 60373	BC856B
7315	4822 130 60511	BC847B
7404	9322 144 59668	IC SM MT48LC1M16A1TG-7S (MRN)R
7405	9322 144 59668	IC SM MT48LC1M16A1TG-7S (MRN)R
7501	4822 130 60511	BC847B
7503	9322 151 16671	STI5505AVC
7504	4822 242 10838	27MHZ 120P FX0-31FT
7505	9322 156 81668	M24C32-WMN6TNKSA
7600	5322 209 71568	PC74HCT14T
7604	4822 130 60511	BC847B
7605	4822 209 17398	LD1117DT33
7607	4822 130 60511	BC847B
7608	4822 130 60373	BC856B
7609	4822 130 60373	BC856B
7610	4822 130 60511	BC847B
7611	9352 456 80115	
7612	4822 130 60511	BC847B
7613	4822 130 60511	BC847B
7614	4822 130 60511	BC847B
7615	4822 130 60511	BC847B
7616	9322 151 71668	IC SM MK2703STR (MICL) R
7617	4822 130 60511	BC847B
7618	4822 130 60511	BC847B
7620	4822 130 60373	BC856B
7621	4822 130 42804	BC817-25
7622	4822 130 60511	BC847B

DVD612/021

Various

0010	3139 247 52811	CAB FRONT DVD612/00X PPT
0025	3139 247 52941	BTN STANDBY DVD612/00X PPT
0030	3139 247 52851	WINDOW DVD612/00X PPT
0040	3139 247 52911	BTN CONTROL DVD612/00X PPT
0200	3139 247 52771	FRONT ASSY DVD612/00X
0224	3139 247 53011	BACK PLATE DVD612/00X PPT
0232	3139 247 52991	COVER TOP DVD612/00X PPT
0261	4822 321 11139	POWER CORD
0336	4822 321 61579	VIDEO-CABLE
0382	3111 170 21992	SCART CABLE (L=1.10M) BMS
0384	3139 228 87051	PROD.ASSY RC19133001/01 PACKED
0387	3139 246 10691	IFU DVD612/02X
1002	3139 248 80861	PCBAS AV DVD612 EU
1003	3139 248 80941	PCBAS FR DVD612 EU
1005	3122 427 22572	PSU DVD VFM EURO
1014	3104 157 11190	CWAS FLEX DVD 22 130 32S

DVD612/051

Various

0010	3139 247 52811	CAB FRONT DVD612/00X PPT
0025	3139 247 52941	BTN STANDBY DVD612/00X PPT
0030	3139 247 52851	WINDOW DVD612/00X PPT
0040	3139 247 52911	BTN CONTROL DVD612/00X PPT
0200	3139 247 52771	FRONT ASSY DVD612/00X
0224	3139 247 53011	BACK PLATE DVD612/00X PPT
0232	3139 247 52991	COVER TOP DVD612/00X PPT
0261▲	3139 128 75222	MAINSCORD (2.3M) UK BK (VHR)
0333	4822 321 11357	AUDIO CORD SET
0336	4822 321 61579	VIDEO-CABLE

0382	3111 170 21992	SCART CABLE (L=1.10M) BMS
0384	3139 228 87051	PROD.ASSY RC19133001/01 PACKED
0387	3139 246 10711	IFU DVD612/05X
1002	3139 248 80861	PCBAS AV DVD612 EU
1003	3139 248 80941	PCBAS FR DVD612 EU
1005	3122 427 22572	PSU DVD VFM EURO
1014	3104 157 11190	CWAS FLEX DVD 22 130 32S